

SEQUENCE LISTING

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<130> 690121.405USPC

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<141> 2004-06-25

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<151> 2004-06-25

<150> JP 2003-289469

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<151> 2003-06-25

<160> 50

<170> PatentIn version 3.1

<210> 1

<211> 1929

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(1929)

<223> fibronectin 1

<400> 1

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ctg	ggg	aca	gcg	gtg	ccc	tcc	acg	gga	gcc	tcg	aag	agc	aag	agg	cag	96
Leu	Gly	Thr	Ala	Val	Pro	Ser	Thr	Gly	Ala	Ser	Lys	Ser	Lys	Arg	Gln	
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gct	cag	caa	atg	gtt	cag	ccc	cag	tcc	ccg	gtg	gct	gtc	agt	caa	agc	144
Ala	Gln	Gln	Met	Val	Gln	Pro	Gln	Ser	Pro	Val	Ala	Val	Ser	Gln	Ser	
	35					40				45						

aag	ccc	ggt	tgt	tat	gac	aat	gga	aaa	cac	tat	cag	ata	aat	caa	cag	192
Lys	Pro	Gly	Cys	Tyr	Asp	Asn	Gly	Lys	His	Tyr	Gln	Ile	Asn	Gln	Gln	
	50					55				60						

tgg	gag	cgg	acc	tac	cta	ggc	aat	gcg	ttg	gtt	tgt	act	tgt	tat	gga	240
Trp	Glu	Arg	Thr	Tyr	Leu	Gly	Asn	Ala	Leu	Val	Cys	Thr	Cys	Tyr	Gly	
65			70				75				80					

gga	agc	cga	ggt	ttt	aac	tgc	gag	agt	aaa	cct	gaa	gct	gaa	gag	act	288
Gly	Ser	Arg	Gly	Phe	Asn	Cys	Glu	Ser	Lys	Pro	Glu	Ala	Glu	Glu	Thr	
			85				90				95					

tgc	ttt	gac	aag	tac	act	ggg	aac	act	tac	cga	gtg	ggt	gac	act	tat	336
Cys	Phe	Asp	Lys	Tyr	Thr	Gly	Asn	Thr	Tyr	Arg	Val	Gly	Asp	Thr	Tyr	
	100					105				110						

gag	cgt	cct	aaa	gac	tcc	atg	atc	tgg	gac	tgt	acc	tgc	atc	ggg	gct	384
Glu	Arg	Pro	Lys	Asp	Ser	Met	Ile	Trp	Asp	Cys	Thr	Cys	Ile	Gly	Ala	

115	120	125	
ggg cga ggg aga ata agc tgt acc atc gca aac cgc tgc cat gaa ggg			432
Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His Glu Gly			
130	135	140	
ggg cag tcc tac aag att ggt gac acc tgg agg aga cca cat gag act			480
Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His Glu Thr			
145	150	155	160
ggg ggt tac atg tta gag tgt gtg tgt ctt ggt aat gga aaa gga gaa			528
Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys Gly Glu			
165	170	175	
tgg acc tgc aag ccc ata gct gag aag tgt ttt gat cat gct gct ggg			576
Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala Ala Gly			
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act tcc tat gtg gtc gga gaa acg tgg gag aag ccc tac caa ggc tgg			624
Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln Gly Trp			
195	200	205	
atg atg gta gat tgt act tgc ctg gga gaa ggc agc gga cgc atc act			672
Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg Ile Thr			
210	215	220	
tgc act tct aga aat aga tgc aac gat cag gac aca agg aca tcc tat			720
Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr Ser Tyr			
225	230	235	240
aga att gga gac acc tgg agc aag aag gat aat cga gga aac ctg ctc			768
Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn Leu Leu			
245	250	255	

cag tgc atc tgc aca ggc aac ggc cga gga gag tgg aag tgt gag agg	816
Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys Glu Arg	
260 265 270	
cac acc tct gtg cag acc aca tcg agc gga tct ggc ccc ttc acc gat	864
His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe Thr Asp	
275 280 285	
gtt cgt gca gct gtt tac caa ccg cag cct cac ccc cag cct cct ccc	912
Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro Pro Pro	
290 295 300	
tat ggc cac tgt gtc aca gac agt ggt gtg gtc tac tct gtg ggg atg	960
Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val Gly Met	
305 310 315 320	
cag tgg ctg aag aca caa gga aat aag caa atg ctt tgc acg tgc ctg	1008
Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr Cys Leu	
325 330 335	
ggc aac gga gtc agc tgc caa gag aca gct gta acc cag act tac ggt	1056
Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr Tyr Gly	
340 345 350	
ggc aac tca aat gga gag cca tgt gtc tta cca ttc acc tac aat ggc	1104
Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr Asn Gly	
355 360 365	
agg acg gac agc aca act tcg aat tat gag cag gac cag aaa tac tct	1152
Arg Thr Asp Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr Ser	
370 375 380	
ttc tgc aca gac cac act gtt ttg gtt cag act cga gga gga aat tcc	1200
Phe Cys Thr Asp His Thr Val Leu Val Gln Thr Arg Gly Gly Asn Ser	

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aat ggt gcc ttg tgc cac ttc ccc ttc cta tac aac aac cac aat tac				1248
Asn Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn Tyr				
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act gat tgc act tct gag ggc aga aga gac aac atg aag tgg tgt ggg				1296
Thr Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys Gly				
	420	425	430	
acc aca cag aac tat gat gcc gac cag aag ttt ggg ttc tgc ccc atg				1344
Thr Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro Met				
	435	440	445	
gct gcc cac gag gaa atc tgc aca acc aat gaa ggg gtc atg tac cgc				1392
Ala Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr Arg				
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att gga gat cag tgg gat aag cag cat gac atg ggt cac atg atg agg				1440
Ile Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met Arg				
465	470	475	480	
tgc acg tgt gtt ggg aat ggt cgt ggg gaa tgg aca tgc att gcc tac				1488
Cys Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Ile Ala Tyr				
	485	490	495	
tcg cag ctt cga gat cag tgc att gtt gat gac atc act tac aat gtg				1536
Ser Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr Asn Val				
	500	505	510	
aac gac aca ttc cac aag cgt cat gaa gag ggg cac atg ctg aac tgt				1584
Asn Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn Cys				
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Thr Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val Asp	
530 535 540	
caa tgc cag gat tca gag act ggg acg ttt tat caa att gga gat tca	1680
Gln Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp Ser	
545 550 555 560	
tgg gag aag tat gtg cat ggt gtc aga tac cag tgc tac tgc tat ggc	1728
Trp Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr Gly	
565 570 575	
cgt ggc att ggg gag tgg cat tgc caa cct tta cag acc tat cca agc	1776
Arg Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro Ser	
580 585 590	
tca agt ggt cct gtc gaa gta ttt atc act gag act ccg agt cag ccc	1824
Ser Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln Pro	
595 600 605	
aac tcc cac ccc atc cag tgg aat gca cca cag cca tct cac att tcc	1872
Asn Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile Ser	
610 615 620	
aag tac att ctc agg tgg aga cct gtg agt atc cca ccc aga aac ctt	1920
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Gly Tyr	

<211> 642

<212> PRT

<213> Homo sapiens

<400> 2

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 35 40 45

Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn Gln Gln
 50 55 60

Trp Glu Arg Thr Tyr Leu Gly Asn Ala Leu Val Cys Thr Cys Tyr Gly
65 70 75 80

Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu Glu Thr
 85 90 95

Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp Thr Tyr
 100 105 110

Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile Gly Ala
 115 120 125

Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His Glu Gly
 130 135 140

Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His Glu Thr
 145 150 155 160

Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys Gly Glu
 165 170 175

Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala Ala Gly
 180 185 190

Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln Gly Trp
 195 200 205

Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg Ile Thr
 210 215 220

Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr Ser Tyr
 225 230 235 240

Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn Leu Leu

245

250

255

Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys Glu Arg

260

265

270

His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe Thr Asp

275

280

285

Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro Pro Pro

290

295

300

Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val Gly Met

305

310

315

320

Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr Cys Leu

325

330

335

Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr Tyr Gly

340

345

350

Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr Asn Gly

355

360

365

Arg Thr Asp Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr Ser

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375

380

Phe Cys Thr Asp His Thr Val Leu Val Gln Thr Arg Gly Gly Asn Ser
 385 390 395 400

Asn Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn Tyr
 405 410 415

Thr Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys Gly
 420 425 430

Thr Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro Met
 435 440 445

Ala Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr Arg
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Ile Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met Arg
 465 470 475 480

Cys Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Ile Ala Tyr
 485 490 495

Ser Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr Asn Val
 500 505 510

Asn Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn Cys

515

520

525

Thr Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val Asp
 530 535 540

Gln Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp Ser
 545 550 555 560

Trp Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr Gly
 565 570 575

Arg Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro Ser
 580 585 590

Ser Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln Pro
 595 600 605

Asn Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile Ser
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Gly Tyr

<210> 3

<211> 1437

<212> DNA

<213> *Mus musculus*

<220>

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<222> (1)..(1437)

<223> vitronectin

<400> 3

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Ser Leu Ala Asp Gln Glu Ser Cys Lys Gly Arg Cys Thr Gln Gly Phe

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atg gcc agc aag aag tgt cag tgt gac gag ctt tgc act tac tat cag 144

Met Ala Ser Lys Lys Cys Gln Cys Asp Glu Leu Cys Thr Tyr Tyr Gln

35 40 45

agc tgc tgt gcc gac tac atg gag cag tgc aag ccc caa gta acg cgg 192

Ser Cys Cys Ala Asp Tyr Met Glu Gln Cys Lys Pro Gln Val Thr Arg

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ggg gac gtg ttc act atg cca gag gat gat tat tgg agc tat gac tac 240

Gly Asp Val Phe Thr Met Pro Glu Asp Asp Tyr Trp Ser Tyr Asp Tyr

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gtg gag gag ccc aag aac aat acc aac acc ggt gtg caa ccc gag aac 288

Val Glu Glu Pro Lys Asn Asn Thr Asn Thr Gly Val Gln Pro Glu Asn	
85 90 95	
acc tct cca ccc ggt gac cta aat cct cgg acg gac ggc act cta aag	336
Thr Ser Pro Pro Gly Asp Leu Asn Pro Arg Thr Asp Gly Thr Leu Lys	
100 105 110	
ccg aca gcc ttc cta gat cct gag gaa cag cca agc acc cca gcg cct	384
Pro Thr Ala Phe Leu Asp Pro Glu Glu Gln Pro Ser Thr Pro Ala Pro	
115 120 125	
aaa gtg gag caa cag gag gag atc cta agg ccc gac acc act gat caa	432
Lys Val Glu Gln Gln Glu Glu Ile Leu Arg Pro Asp Thr Thr Asp Gln	
130 135 140	
ggg acc cct gag ttt cca gag gaa gaa ctg tgc agt gga aag ccc ttt	480
Gly Thr Pro Glu Phe Pro Glu Glu Glu Leu Cys Ser Gly Lys Pro Phe	
145 150 155 160	
gac gcc ttc acg gat ctc aag aat ggg tcc ctc ttt gcc ttc cga ggg	528
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cag tac cgc tgt gag cta gat gag acg gca gtg agg cct ggg tac ccc	576
Gln Tyr Arg Cys Glu Leu Asp Glu Thr Ala Val Arg Pro Gly Tyr Pro	
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aaa ctt atc caa gat gtc tgg ggc att gag ggc ccc atc gat gct gcc	624
Lys Leu Ile Gln Asp Val Trp Gly Ile Glu Gly Pro Ile Asp Ala Ala	
195 200 205	
ttc act cgc atc aac tgt cag ggg aag acc tac ttg ttc aag ggt agt	672
Phe Thr Arg Ile Asn Cys Gln Gly Lys Thr Tyr Leu Phe Lys Gly Ser	
210 215 220	

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Gln Tyr Trp Arg Phe Glu Asp Gly Val Leu Asp Pro Gly Tyr Pro Arg	
225 230 235 240	
aac atc tcc gaa ggc ttc agt ggc ata cca gac aat gtt gat gca gcg	768
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245 250 255	
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Phe Ala Leu Pro Ala His Arg Tyr Ser Gly Arg Glu Arg Val Tyr Phe	
260 265 270	
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Phe Lys Gly Lys Gln Tyr Trp Glu His Glu Phe Gln Gln Gln Pro Ser	
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Gln Glu Glu Cys Glu Gly Ser Ser Leu Ser Ala Val Phe Glu His Phe	
290 295 300	
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Ala Leu Leu Gln Arg Asp Ser Trp Glu Asn Ile Phe Glu Leu Leu Phe	
305 310 315 320	
tgg ggc aga tcc tct gat gga gcc aga gaa ccc caa ttc atc agc cgg	1008
Trp Gly Arg Ser Ser Asp Gly Ala Arg Glu Pro Gln Phe Ile Ser Arg	
325 330 335	
aac tgg cat ggt gtg cca ggg aaa gtg gac gct gct atg gcc ggc cgc	1056
Asn Trp His Gly Val Pro Gly Lys Val Asp Ala Ala Met Ala Gly Arg	
340 345 350	
atc tac gtc act ggc tcc tta tcc cac tct gcc caa gcc aaa aaa cag	1104

Ile Tyr Val Thr Gly Ser Leu Ser His Ser Ala Gln Ala Lys Lys Gln
 355 360 365

 ccg tct aag cgt aga agc cga aag cgc tat cgt tca cgc cga ggg cgt 1152
 Pro Ser Lys Arg Arg Ser Arg Lys Arg Tyr Arg Ser Arg Arg Gly Arg
 370 375 380

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 Gly His Arg Arg Ser Gln Ser Ser Asn Ser Arg Arg Ser Ser Arg Ser
 385 390 395 400

 atc tgg ttc tct ttg ttc tcc agc gag gag agt ggg cta gga acc tac 1248
 Ile Trp Phe Ser Leu Phe Ser Ser Glu Glu Ser Gly Leu Gly Thr Tyr
 405 410 415

 aac aac tat gat tat gat atg gac tgg ctt gta cct gcc acc tgc gag 1296
 Asn Asn Tyr Asp Tyr Asp Met Asp Trp Leu Val Pro Ala Thr Cys Glu
 420 425 430

 ccc att cag agc gtc tat ttc ttc tct gga gac aaa tac tac cga gtc 1344
 Pro Ile Gln Ser Val Tyr Phe Phe Ser Gly Asp Lys Tyr Tyr Arg Val
 435 440 445

 aac ctt aga acc cgg cga gtg gac tct gtg aat cct ccc tac cca cgc 1392
 Asn Leu Arg Thr Arg Arg Val Asp Ser Val Asn Pro Pro Tyr Pro Arg
 450 455 460

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<210> 4

<211> 478

<212> PRT

<213> Mus musculus

<400> 4

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35 40 45

Ser Cys Cys Ala Asp Tyr Met Glu Gln Cys Lys Pro Gln Val Thr Arg
50 55 60

Gly Asp Val Phe Thr Met Pro Glu Asp Asp Tyr Trp Ser Tyr Asp Tyr
65 70 75 80

Val Glu Glu Pro Lys Asn Asn Thr Asn Thr Gly Val Gln Pro Glu Asn
85 90 95

Thr Ser Pro Pro Gly Asp Leu Asn Pro Arg Thr Asp Gly Thr Leu Lys
100 105 110

Pro Thr Ala Phe Leu Asp Pro Glu Glu Gln Pro Ser Thr Pro Ala Pro
 115 120 125

Lys Val Glu Gln Gln Glu Glu Ile Leu Arg Pro Asp Thr Thr Asp Gln
 130 135 140

Gly Thr Pro Glu Phe Pro Glu Glu Glu Leu Cys Ser Gly Lys Pro Phe
 145 150 155 160

Asp Ala Phe Thr Asp Leu Lys Asn Gly Ser Leu Phe Ala Phe Arg Gly
 165 170 175

Gln Tyr Arg Cys Glu Leu Asp Glu Thr Ala Val Arg Pro Gly Tyr Pro
 180 185 190

Lys Leu Ile Gln Asp Val Trp Gly Ile Glu Gly Pro Ile Asp Ala Ala
 195 200 205

Phe Thr Arg Ile Asn Cys Gln Gly Lys Thr Tyr Leu Phe Lys Gly Ser
 210 215 220

Gln Tyr Trp Arg Phe Glu Asp Gly Val Leu Asp Pro Gly Tyr Pro Arg
 225 230 235 240

Asn Ile Ser Glu Gly Phe Ser Gly Ile Pro Asp Asn Val Asp Ala Ala
 245 250 255

Phe Ala Leu Pro Ala His Arg Tyr Ser Gly Arg Glu Arg Val Tyr Phe
260 265 270

Phe Lys Gly Lys Gln Tyr Trp Glu His Glu Phe Gln Gln Gln Pro Ser
275 280 285

Gln Glu Glu Cys Glu Gly Ser Ser Leu Ser Ala Val Phe Glu His Phe
290 295 300

Ala Leu Leu Gln Arg Asp Ser Trp Glu Asn Ile Phe Glu Leu Leu Phe
305 310 315 320

Trp Gly Arg Ser Ser Asp Gly Ala Arg Glu Pro Gln Phe Ile Ser Arg
325 330 335

Asn Trp His Gly Val Pro Gly Lys Val Asp Ala Ala Met Ala Gly Arg
340 345 350

Ile Tyr Val Thr Gly Ser Leu Ser His Ser Ala Gln Ala Lys Lys Gln
355 360 365

Pro Ser Lys Arg Arg Ser Arg Lys Arg Tyr Arg Ser Arg Arg Gly Arg
370 375 380

Gly His Arg Arg Ser Gln Ser Ser Asn Ser Arg Arg Ser Ser Arg Ser
 385 390 395 400

Ile Trp Phe Ser Leu Phe Ser Ser Glu Glu Ser Gly Leu Gly Thr Tyr
 405 410 415

Asn Asn Tyr Asp Tyr Asp Met Asp Trp Leu Val Pro Ala Thr Cys Glu
 420 425 430

Pro Ile Gln Ser Val Tyr Phe Phe Ser Gly Asp Lys Tyr Tyr Arg Val
 435 440 445

Asn Leu Arg Thr Arg Arg Val Asp Ser Val Asn Pro Pro Tyr Pro Arg
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Ser Ile Ala Gln Tyr Trp Leu Gly Cys Pro Thr Ser Glu Lys
 465 470 475

<210> 5

<211> 9511

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (121)..(9372)

<223> laminin-2 alpha chain

<400> 5

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cag cgg cga cag tcc caa gcg cat caa cag aga ggt tta ttt cct gct 168

Gln Arg Arg Gln Ser Gln Ala His Gln Gln Arg Gly Leu Phe Pro Ala

1 5 10 15

gtc ctg aat ctt gct tcg aat gca ctc atc aca acc aat gct aca tgt 216

Val Leu Asn Leu Ala Ser Asn Ala Leu Ile Thr Thr Asn Ala Thr Cys

20 25 30

ggg gaa aaa gga ccc gag atg tac tgc aag ttg gtg gaa cat gtc ccc 264

Gly Glu Lys Gly Pro Glu Met Tyr Cys Lys Leu Val Glu His Val Pro

35 40 45

ggg cag cct gtg agg aac cct cag tgc cga atc tgc aat cag aac agc 312

Gly Gln Pro Val Arg Asn Pro Gln Cys Arg Ile Cys Asn Gln Asn Ser

50 55 60

agc aat cca tac cag agg cac ccg att acg aat gct att gat ggc aag 360

Ser Asn Pro Tyr Gln Arg His Pro Ile Thr Asn Ala Ile Asp Gly Lys

65 70 75 80

aac aca tgg tgg cag agt ccc agt atc aag aat gga gtg gaa tac cat 408

Asn Thr Trp Trp Gln Ser Pro Ser Ile Lys Asn Gly Val Glu Tyr His

85 90 95

tat gtg aca att act ctg gat tta cag cag gtg ttc cag att gcc tac 456

Tyr Val Thr Ile Thr Leu Asp Leu Gln Gln Val Phe Gln Ile Ala Tyr

100 105 110

gta att gtg aag gca gcc aat tcc cct cgg cct gga aac tgg att ttg	504
Val Ile Val Lys Ala Ala Asn Ser Pro Arg Pro Gly Asn Trp Ile Leu	
115 120 125	
gaa cgt tcc ctg gat gac gtg gag tac aaa ccc tgg cag tat cat gcg	552
Glu Arg Ser Leu Asp Asp Val Glu Tyr Lys Pro Trp Gln Tyr His Ala	
130 135 140	
gtg aca gac acg gag tgc ctg acc ctc tac aat atc tat ccc cgc act	600
Val Thr Asp Thr Glu Cys Leu Thr Leu Tyr Asn Ile Tyr Pro Arg Thr	
145 150 155 160	
gga cca cca tcc tac gcc aaa gat gat gag gtc atc tgc act tca ttt	648
Gly Pro Pro Ser Tyr Ala Lys Asp Asp Glu Val Ile Cys Thr Ser Phe	
165 170 175	
tat tcg aag atc cac cct tta gaa aat gga gag att cac att tct ttg	696
Tyr Ser Lys Ile His Pro Leu Glu Asn Gly Glu Ile His Ile Ser Leu	
180 185 190	
atc aat ggg aga cca agt gct gat gac ccc tcc cct gaa ctc ctg gaa	744
Ile Asn Gly Arg Pro Ser Ala Asp Asp Pro Ser Pro Glu Leu Leu Glu	
195 200 205	
ttc acc tct gct cgc tac att cgc ctg aga ttt cag agg atc cgc acc	792
Phe Thr Ser Ala Arg Tyr Ile Arg Leu Arg Phe Gln Arg Ile Arg Thr	
210 215 220	
ttg aat gca gac ttg atg atg ttt gct cac aaa gac ccc aga gaa atc	840
Leu Asn Ala Asp Leu Met Met Phe Ala His Lys Asp Pro Arg Glu Ile	
225 230 235 240	
gat ccc att gtc aca cga aga tat tac tat tct gtc aag gat att tca	888

Asp Pro Ile Val Thr Arg Arg Tyr Tyr Tyr Ser Val Lys Asp Ile Ser	
245 250 255	
gtt ggc ggg atg tgc atc tgt tat ggt cat gcc cgg gct tgt cca ctt	936
Val Gly Gly Met Cys Ile Cys Tyr Gly His Ala Arg Ala Cys Pro Leu	
260 265 270	
gac cct gca aca aat aaa tca cgc tgt gag tgt gaa cat aac acc tgt	984
Asp Pro Ala Thr Asn Lys Ser Arg Cys Glu Cys Glu His Asn Thr Cys	
275 280 285	
ggg gaa agc tgt gac agg tgc tgt cca gga ttc cat cag aag cct tgg	1032
Gly Glu Ser Cys Asp Arg Cys Cys Pro Gly Phe His Gln Lys Pro Trp	
290 295 300	
aga gct gga acc ttc ctc acc aag tct gag tgt gaa gca tgc aat tgt	1080
Arg Ala Gly Thr Phe Leu Thr Lys Ser Glu Cys Glu Ala Cys Asn Cys	
305 310 315 320	
cac gga aaa gct gag gaa tgc tat tat gat gaa act gtt gct agc aga	1128
His Gly Lys Ala Glu Glu Cys Tyr Tyr Asp Glu Thr Val Ala Ser Arg	
325 330 335	
aat cta agt tta aat ata cat ggg aag tac atc gga ggg ggt gtg tgc	1176
Asn Leu Ser Leu Asn Ile His Gly Lys Tyr Ile Gly Gly Gly Val Cys	
340 345 350	
atc aac tgc aca cat aac acg gct ggg ata aat tgt gag aca tgt gtt	1224
Ile Asn Cys Thr His Asn Thr Ala Gly Ile Asn Cys Glu Thr Cys Val	
355 360 365	
gat gga ttc ttc aga ccc aaa ggg gtg tca cca aat tat cca aga cca	1272
Asp Gly Phe Phe Arg Pro Lys Gly Val Ser Pro Asn Tyr Pro Arg Pro	
370 375 380	

tgc cag cca tgt cac tgt gat cca act ggc tcc ctt agt gaa gtc tgt	1320
Cys Gln Pro Cys His Cys Asp Pro Thr Gly Ser Leu Ser Glu Val Cys	
385 390 395 400	
gtc aaa gat gag aaa tac gcc cag cga ggg ttg aaa cct gga tcc tgt	1368
Val Lys Asp Glu Lys Tyr Ala Gln Arg Gly Leu Lys Pro Gly Ser Cys	
405 410 415	
cac tgc aaa act ggc ttt gga ggc gtg aac tgt gat cgc tgt gtc agg	1416
His Cys Lys Thr Gly Phe Gly Gly Val Asn Cys Asp Arg Cys Val Arg	
420 425 430	
ggg tac cat ggt tac cca gac tgc caa ccc tgt aac tgt agt ggc ttg	1464
Gly Tyr His Gly Tyr Pro Asp Cys Gln Pro Cys Asn Cys Ser Gly Leu	
435 440 445	
ggg agc aca aat gag gac cct tgc gtt ggg ccc tgt agc tgt aag gag	1512
Gly Ser Thr Asn Glu Asp Pro Cys Val Gly Pro Cys Ser Cys Lys Glu	
450 455 460	
aat gtt gaa ggt gaa gac tgt agt cgt tgc aaa tct ggt ttc ttc aac	1560
Asn Val Glu Gly Glu Asp Cys Ser Arg Cys Lys Ser Gly Phe Phe Asn	
465 470 475 480	
ttg caa gaa gat aat cag aaa ggc tgt gag gag tgt ttc tgt tca gga	1608
Leu Gln Glu Asp Asn Gln Lys Gly Cys Glu Glu Cys Phe Cys Ser Gly	
485 490 495	
gta tca aac aga tgt cag agt tcc tac tgg acc tat ggg aat att caa	1656
Val Ser Asn Arg Cys Gln Ser Ser Tyr Trp Thr Tyr Gly Asn Ile Gln	
500 505 510	
gac atg cgt ggt tgg tat ctc aca gac ctc tct ggc cgc att cgg atg	1704

Asp Met Arg Gly Trp Tyr Leu Thr Asp Leu Ser Gly Arg Ile Arg Met	
515 520 525	
gct ccc cag ctt gat aac cct gac tca cct cag cag atc agc atc agt	1752
Ala Pro Gln Leu Asp Asn Pro Asp Ser Pro Gln Gln Ile Ser Ile Ser	
530 535 540	
aac tct gag gcc cgg aaa tcc ctg ctt gat ggt tac tac tgg agt gca	1800
Asn Ser Glu Ala Arg Lys Ser Leu Leu Asp Gly Tyr Tyr Trp Ser Ala	
545 550 555 560	
ccg cct cca tat ctg gga aac aga ctt cca gct gtt ggg gga cag ttg	1848
Pro Pro Pro Tyr Leu Gly Asn Arg Leu Pro Ala Val Gly Gly Gln Leu	
565 570 575	
tca ttt acc atc tca tat gac ctc gaa gaa gag gaa gac gat aca gaa	1896
Ser Phe Thr Ile Ser Tyr Asp Leu Glu Glu Glu Glu Asp Asp Thr Glu	
580 585 590	
aaa ctc ctt cag ctg atg att atc ttt gag gga aat gac tta aga atc	1944
Lys Leu Leu Gln Leu Met Ile Ile Phe Glu Gly Asn Asp Leu Arg Ile	
595 600 605	
agc aca gcg tat aag gag gtg tac tta gag cca tct gaa gaa cac gtt	1992
Ser Thr Ala Tyr Lys Glu Val Tyr Leu Glu Pro Ser Glu Glu His Val	
610 615 620	
gag gag gtg tca ctc aaa gaa gag gcc ttt act ata cat gga aca aat	2040
Glu Glu Val Ser Leu Lys Glu Glu Ala Phe Thr Ile His Gly Thr Asn	
625 630 635 640	
ttg cca gtc act aga aaa gat ttc atg att gtt ctc aca aat ttg gga	2088
Leu Pro Val Thr Arg Lys Asp Phe Met Ile Val Leu Thr Asn Leu Gly	
645 650 655	

gag atc ctt atc caa atc aca tac aac tta ggg atg gac gcc atc ttc	2136
Glu Ile Leu Ile Gln Ile Thr Tyr Asn Leu Gly Met Asp Ala Ile Phe	
660 665 670	
agg ctg agt tct gtc aat ctt gaa tct cct gtc cct tat cct act gat	2184
Arg Leu Ser Ser Val Asn Leu Glu Ser Pro Val Pro Tyr Pro Thr Asp	
675 680 685	
aga cgt att gca act gat gtg gaa gtt tgc cag tgt cca cct ggg tac	2232
Arg Arg Ile Ala Thr Asp Val Glu Val Cys Gln Cys Pro Pro Gly Tyr	
690 695 700	
agt ggc agc tct tgt gaa aca tgt tgg cct agg cac cga aga gtt aac	2280
Ser Gly Ser Ser Cys Glu Thr Cys Trp Pro Arg His Arg Arg Val Asn	
705 710 715 720	
ggc acc att ttt ggt ggc att tgt gaa cca tgt cag tgc ttt gct cat	2328
Gly Thr Ile Phe Gly Gly Ile Cys Glu Pro Cys Gln Cys Phe Ala His	
725 730 735	
gca gaa gcc tgt gat gac atc aca gga gaa tgt ctg aac tgt aag gat	2376
Ala Glu Ala Cys Asp Asp Ile Thr Gly Glu Cys Leu Asn Cys Lys Asp	
740 745 750	
cac aca ggt ggg ccg tac tgc aat gaa tgt ctc cct gga ttc tat ggt	2424
His Thr Gly Gly Pro Tyr Cys Asn Glu Cys Leu Pro Gly Phe Tyr Gly	
755 760 765	
gat cct act cga gga agc cct gaa gac tgt cag ccc tgt gcc tgt cca	2472
Asp Pro Thr Arg Gly Ser Pro Glu Asp Cys Gln Pro Cys Ala Cys Pro	
770 775 780	
ctc aat atc cca tca aat aac ttt agt cca aca tgc cat tta gac cgg	2520

Leu	Asn	Ile	Pro	Ser	Asn	Asn	Phe	Ser	Pro	Thr	Cys	His	Leu	Asp	Arg	
785				790				795					800			
agt	ctg	gga	ttg	atc	tgt	gac	gag	tgt	cct	att	ggg	tac	aca	gga	ccg	2568
Ser	Leu	Gly	Leu	Ile	Cys	Asp	Glu	Cys	Pro	Ile	Gly	Tyr	Thr	Gly	Pro	
			805					810					815			
cgc	tgt	gag	agg	tgt	gca	gaa	ggc	tat	ttt	gga	caa	cct	tcc	gta	cct	2616
Arg	Cys	Glu	Arg	Cys	Ala	Glu	Gly	Tyr	Phe	Gly	Gln	Pro	Ser	Val	Pro	
			820					825					830			
gga	gga	tca	tgt	cag	cca	tgc	caa	tgc	aat	gac	aac	ctt	gac	tac	tcc	2664
Gly	Gly	Ser	Cys	Gln	Pro	Cys	Gln	Cys	Asn	Asp	Asn	Leu	Asp	Tyr	Ser	
			835					840					845			
atc	cct	ggc	agc	tgt	gac	agc	ctg	tct	ggc	tcc	tgt	ctg	att	tgt	aag	2712
Ile	Pro	Gly	Ser	Cys	Asp	Ser	Leu	Ser	Gly	Ser	Cys	Leu	Ile	Cys	Lys	
			850					855					860			
cca	ggt	aca	aca	ggc	cgg	tac	tgt	gag	ctc	tgt	gct	gat	ggg	tat	ttt	2760
Pro	Gly	Thr	Thr	Gly	Arg	Tyr	Cys	Glu	Leu	Cys	Ala	Asp	Gly	Tyr	Phe	
865				870				875					880			
gga	gac	gcg	gtt	aat	aca	aag	aac	tgt	caa	cca	tgc	cgt	tgt	gat	atc	2808
Gly	Asp	Ala	Val	Asn	Thr	Lys	Asn	Cys	Gln	Pro	Cys	Arg	Cys	Asp	Ile	
				885				890					895			
aat	ggc	tcc	ttc	tca	gag	gat	tgt	cac	aca	aga	act	ggg	caa	tgt	gag	2856
Asn	Gly	Ser	Phe	Ser	Glu	Asp	Cys	His	Thr	Arg	Thr	Gly	Gln	Cys	Glu	
			900					905					910			
tgc	aga	ccc	aat	gtt	cag	ggg	cgg	cac	tgt	gac	gag	tgt	aag	cct	gaa	2904
Cys	Arg	Pro	Asn	Val	Gln	Gly	Arg	His	Cys	Asp	Glu	Cys	Lys	Pro	Glu	
			915					920					925			

acc ttt ggc ctg caa ctg gga agg ggt tgt ctg ccc tgc aac tgc aat	2952
Thr Phe Gly Leu Gln Leu Gly Arg Gly Cys Leu Pro Cys Asn Cys Asn	
930 935 940	
tct ttt ggg tct aag tcc ttt gac tgt gaa gca agt ggg cag tgc tgg	3000
Ser Phe Gly Ser Lys Ser Phe Asp Cys Glu Ala Ser Gly Gln Cys Trp	
945 950 955 960	
tgc cag cct gga gta gca ggg aag aaa tgt gac cgt tgt gcc cat ggc	3048
Cys Gln Pro Gly Val Ala Gly Lys Lys Cys Asp Arg Cys Ala His Gly	
965 970 975	
tac ttc aac ttc caa gaa gga ggc tgc ata gct tgt gac tgt tct cat	3096
Tyr Phe Asn Phe Gln Glu Gly Gly Cys Ile Ala Cys Asp Cys Ser His	
980 985 990	
ctg ggc aac aac tgt gac cca aaa act ggc caa tgc att tgc cca ccc	3144
Leu Gly Asn Asn Cys Asp Pro Lys Thr Gly Gln Cys Ile Cys Pro Pro	
995 1000 1005	
aat acc act gga gaa aag tgt tct gag tgt ctt ccc aac acc tgg	3189
Asn Thr Thr Gly Glu Lys Cys Ser Glu Cys Leu Pro Asn Thr Trp	
1010 1015 1020	
ggt cac agc att gtc acc ggc tgt aag gtt tgt aac tgc agc act	3234
Gly His Ser Ile Val Thr Gly Cys Lys Val Cys Asn Cys Ser Thr	
1025 1030 1035	
gtg ggg tcc ttg gct tct cag tgc aat gta aac acg ggc cag tgc	3279
Val Gly Ser Leu Ala Ser Gln Cys Asn Val Asn Thr Gly Gln Cys	
1040 1045 1050	
agc tgt cat cca aaa ttc tct ggt atg aaa tgc tca gag tgc agc	3324

Ser	Cys	His	Pro	Lys	Phe	Ser	Gly	Met	Lys	Cys	Ser	Glu	Cys	Ser	
1055					1060				1065						
cga	ggt	cac	tgg	aac	tat	cct	ctc	tgc	act	cta	tgt	gac	tgc	ttc	3369
Arg	Gly	His	Trp	Asn	Tyr	Pro	Leu	Cys	Thr	Leu	Cys	Asp	Cys	Phe	
1070					1075				1080						
ctt	cca	ggc	aca	gat	gcc	acg	act	tgt	gat	ctg	gag	act	agg	aaa	3414
Leu	Pro	Gly	Thr	Asp	Ala	Thr	Thr	Cys	Asp	Leu	Glu	Thr	Arg	Lys	
1085					1090				1095						
tgc	tcc	tgt	agt	gat	caa	act	gga	cag	tgc	agc	tgt	aag	gtg	aat	3459
Cys	Ser	Cys	Ser	Asp	Gln	Thr	Gly	Gln	Cys	Ser	Cys	Lys	Val	Asn	
1100					1105				1110						
gtg	gaa	ggc	gtc	cac	tgt	gac	agg	tgc	cgg	cct	ggc	aaa	ttt	gga	3504
Val	Glu	Gly	Val	His	Cys	Asp	Arg	Cys	Arg	Pro	Gly	Lys	Phe	Gly	
1115					1120				1125						
cta	gat	gcc	aag	aac	cca	ctt	ggc	tgc	agc	agc	tgc	tac	tgc	ttt	3549
Leu	Asp	Ala	Lys	Asn	Pro	Leu	Gly	Cys	Ser	Ser	Cys	Tyr	Cys	Phe	
1130					1135				1140						
gga	gtt	act	agt	caa	tgc	tct	gaa	gca	aag	ggg	ctg	atc	cgt	acg	3594
Gly	Val	Thr	Ser	Gln	Cys	Ser	Glu	Ala	Lys	Gly	Leu	Ile	Arg	Thr	
1145					1150				1155						
tgg	gtg	act	ttg	agt	gat	gaa	cag	acc	att	cta	cct	ctg	gtg	gat	3639
Trp	Val	Thr	Leu	Ser	Asp	Glu	Gln	Thr	Ile	Leu	Pro	Leu	Val	Asp	
1160					1165				1170						
gag	gcc	ctg	cag	cac	acg	act	acc	aaa	ggc	att	gct	ttc	cag	aaa	3684
Glu	Ala	Leu	Gln	His	Thr	Thr	Thr	Lys	Gly	Ile	Ala	Phe	Gln	Lys	
1175					1180				1185						

cca gag	att gtt	gca aag	atg gat	gaa gtc	agg caa	gag ctc	cat	3729
Pro Glu	Ile Val	Ala Lys	Met Asp	Glu Val	Arg Gln	Glu Leu	His	
1190		1195		1200				
ttg gaa	cct ttt	tac tgg	aaa ctc	cca caa	caa ttt	gaa ggg	aaa	3774
Leu Glu	Pro Phe	Tyr Trp	Lys Leu	Pro Gln	Gln Phe	Glu Gly	Lys	
1205		1210		1215				
aag ttg	atg gct	tat ggt	ggc aaa	ctc aag	tat gcc	atc tat	ttt	3819
Lys Leu	Met Ala	Tyr Gly	Gly Lys	Leu Lys	Tyr Ala	Ile Tyr	Phe	
1220		1225		1230				
gag gct	cgg gat	gag aca	ggc ttt	gcc aca	tat aaa	cct caa	gtt	3864
Glu Ala	Arg Asp	Glu Thr	Gly Phe	Ala Thr	Tyr Lys	Pro Gln	Val	
1235		1240		1245				
atc att	cga ggt	gga act	cct act	cat gct	aga att	att acc	aga	3909
Ile Ile	Arg Gly	Gly Thr	Pro Thr	His Ala	Arg Ile	Ile Thr	Arg	
1250		1255		1260				
cac atg	gct gcc	cct ctc	att ggc	cag ttg	aca cgg	cat gaa	ata	3954
His Met	Ala Ala	Pro Leu	Ile Gly	Gln Leu	Thr Arg	His Glu	Ile	
1265		1270		1275				
gaa atg	aca gag	aaa gaa	tgg aaa	tat tat	ggt gat	gat cct	cga	3999
Glu Met	Thr Glu	Lys Glu	Trp Lys	Tyr Tyr	Gly Asp	Asp Pro	Arg	
1280		1285		1290				
atc agt	aga act	gtg acc	cgt gaa	gac ttc	ttg gat	ata cta	tat	4044
Ile Ser	Arg Thr	Val Thr	Arg Glu	Asp Phe	Leu Asp	Ile Leu	Tyr	
1295		1300		1305				
gat att	cac tat	atc ctt	atc aag	gct act	tat gga	aac gtt	gtg	4089

Asp Ile	His Tyr	Ile Leu	Ile Lys	Ala Thr	Tyr Gly	Asn Val	Val	
1310		1315		1320				
aga caa	agc cgc	att tct	gaa atc	tcc atg	gaa gta	gct gaa	cca	4134
Arg Gln	Ser Arg	Ile Ser	Glu Ile	Ser Met	Glu Val	Ala Glu	Pro	
1325		1330		1335				
gga cat	gta tta	gca ggg	agc cca	cca gca	cac ttg	ata gaa	aga	4179
Gly His	Val Leu	Ala Gly	Ser Pro	Pro Ala	His Leu	Ile Glu	Arg	
1340		1345		1350				
tgc gat	tgc cct	cct ggc	tat tct	ggc ttg	tct tgt	gag acg	tgt	4224
Cys Asp	Cys Pro	Pro Gly	Tyr Ser	Gly Leu	Ser Cys	Glu Thr	Cys	
1355		1360		1365				
gca cca	gga ttt	tac cga	ctt cgt	tct gaa	cca ggt	ggg cgg	act	4269
Ala Pro	Gly Phe	Tyr Arg	Leu Arg	Ser Glu	Pro Gly	Gly Arg	Thr	
1370		1375		1380				
cct gga	cca acc	tta ggg	acc tgt	gtt ccc	tgc caa	tgt aat	gga	4314
Pro Gly	Pro Thr	Leu Gly	Thr Cys	Val Pro	Cys Gln	Cys Asn	Gly	
1385		1390		1395				
cac agc	agt cag	tgt gat	cct gag	acc tca	gta tgc	cag aat	tgt	4359
His Ser	Ser Gln	Cys Asp	Pro Glu	Thr Ser	Val Cys	Gln Asn	Cys	
1400		1405		1410				
cag cat	cac act	gct ggt	gac ttc	tgt gag	cgc tgt	gcc ctt	ggc	4404
Gln His	His Thr	Ala Gly	Asp Phe	Cys Glu	Arg Cys	Ala Leu	Gly	
1415		1420		1425				
tac tat	gga atc	gtc agg	gga ttg	cca aat	gac tgc	caa cca	tgt	4449
Tyr Tyr	Gly Ile	Val Arg	Gly Leu	Pro Asn	Asp Cys	Gln Pro	Cys	
1430		1435		1440				

gct tgt	cct ctg att tcg ccc	agc aac aat ttc agc	ccc tct tgt	4494
Ala Cys	Pro Leu Ile Ser Pro	Ser Asn Asn Phe Ser	Pro Ser Cys	
1445	1450	1455		
gta ttg	gaa ggt ctg gaa gat	tac cgt tgc acc gcc	tgc cca agg	4539
Val Leu	Glu Gly Leu Glu Asp	Tyr Arg Cys Thr Ala	Cys Pro Arg	
1460	1465	1470		
ggc tat	gaa gga cag tac tgt	gaa agg tgt gcc cca	ggc tat act	4584
Gly Tyr	Glu Gly Gln Tyr Cys	Glu Arg Cys Ala Pro	Gly Tyr Thr	
1475	1480	1485		
ggc agc	cca agc agc ccc gga	ggc tcc tgc caa gaa	tgt gag tgt	4629
Gly Ser	Pro Ser Ser Pro Gly	Gly Ser Cys Gln Glu	Cys Glu Cys	
1490	1495	1500		
gac cct	tat ggc tcc cta ccg	gtt ccc tgt gac cgg	gtc aca gga	4674
Asp Pro	Tyr Gly Ser Leu Pro	Val Pro Cys Asp Arg	Val Thr Gly	
1505	1510	1515		
ctc tgc	acg tgc cgc cct gga	gcc aca gga agg aag	tgt gat ggc	4719
Leu Cys	Thr Cys Arg Pro Gly	Ala Thr Gly Arg Lys	Cys Asp Gly	
1520	1525	1530		
tgc gag	cac tgg cat gca cgc	gag ggt gca gag tgt	gtc ttt tgt	4764
Cys Glu	His Trp His Ala Arg	Glu Gly Ala Glu Cys	Val Phe Cys	
1535	1540	1545		
gga gac	gag tgt aca ggc ctt	ctt ctt ggt gac ctg	gct cgt cta	4809
Gly Asp	Glu Cys Thr Gly Leu	Leu Leu Gly Asp Leu	Ala Arg Leu	
1550	1555	1560		
gag cag	atg acc atg aac atc	aac ctc acg ggc cca	ctg cct gct	4854

Glu Gln	Met Thr	Met Asn	Ile	Asn Leu	Thr Gly	Pro	Leu Pro	Ala	
1565		1570			1575				
cca tat	aaa att	ctg tat	ggt	ctt gaa	aat aca	act	cag gaa	ctc	4899
Pro Tyr	Lys Ile	Leu Tyr	Gly	Leu Glu	Asn Thr	Thr	Gln Glu	Leu	
1580		1585			1590				
aag cac	ctg cta	tca ccg	caa	cgg gca	cca gag	agg	ctc att	cag	4944
Lys His	Leu Leu	Ser Pro	Gln	Arg Ala	Pro Glu	Arg	Leu Ile	Gln	
1595		1600			1605				
ttg gca	gag ggc	aac gtg	aac	aca ctt	gtg atg	gaa	aca aat	gag	4989
Leu Ala	Glu Gly	Asn Val	Asn	Thr Leu	Val Met	Glu	Thr Asn	Glu	
1610		1615			1620				
ctg cta	acc aga	gca acc	aaa	gtg aca	gca gat	ggt	gag caa	aca	5034
Leu Leu	Thr Arg	Ala Thr	Lys	Val Thr	Ala Asp	Gly	Glu Gln	Thr	
1625		1630			1635				
gga caa	gat gct	gag agg	acc	aac tcc	aga gca	gaa	tcc ttg	gaa	5079
Gly Gln	Asp Ala	Glu Arg	Thr	Asn Ser	Arg Ala	Glu	Ser Leu	Glu	
1640		1645			1650				
gaa ttc	att aaa	ggg ctt	gtc	cag gat	gct gaa	gcc	ata aat	gaa	5124
Glu Phe	Ile Lys	Gly Leu	Val	Gln Asp	Ala Glu	Ala	Ile Asn	Glu	
1655		1660			1665				
aaa gct	gta aaa	cta aat	gaa	acc tta	gga aat	caa	gat aag	aca	5169
Lys Ala	Val Lys	Leu Asn	Glu	Thr Leu	Gly Asn	Gln	Asp Lys	Thr	
1670		1675			1680				
gca gag	aga aac	ttg gag	gag	ctt caa	aag gaa	atc	gac cgg	atg	5214
Ala Glu	Arg Asn	Leu Glu	Glu	Leu Gln	Lys Glu	Ile	Asp Arg	Met	
1685		1690			1695				

ctg aag gaa ctg aga agt aaa gat ctt caa aca cag aag gaa gtt	5259
Leu Lys Glu Leu Arg Ser Lys Asp Leu Gln Thr Gln Lys Glu Val	
1700 1705 1710	
gct gag gat gag ctc gtg gca gca gaa ggc ctt ctg aag aga gta	5304
Ala Glu Asp Glu Leu Val Ala Ala Glu Gly Leu Leu Lys Arg Val	
1715 1720 1725	
aac aag ctg ttt gga gag ccc aga gcc cag aat gaa gat atg gaa	5349
Asn Lys Leu Phe Gly Glu Pro Arg Ala Gln Asn Glu Asp Met Glu	
1730 1735 1740	
aag gat ctc cag cag aaa ctg gca gag tac aag aac aaa ctt gat	5394
Lys Asp Leu Gln Gln Lys Leu Ala Glu Tyr Lys Asn Lys Leu Asp	
1745 1750 1755	
gat gct tgg gat cta ttg aga gaa gcc act gat aaa acc cga gat	5439
Asp Ala Trp Asp Leu Leu Arg Glu Ala Thr Asp Lys Thr Arg Asp	
1760 1765 1770	
gct aat cgt ttg tct gct gcc aat caa aaa aac atg acc ata ctg	5484
Ala Asn Arg Leu Ser Ala Ala Asn Gln Lys Asn Met Thr Ile Leu	
1775 1780 1785	
gag aca aag aag gag gct att gaa ggt agc aaa cga caa ata gag	5529
Glu Thr Lys Lys Glu Ala Ile Glu Gly Ser Lys Arg Gln Ile Glu	
1790 1795 1800	
aac act tta aag gaa ggc aat gac atc ctt gat gaa gcc aat caa	5574
Asn Thr Leu Lys Glu Gly Asn Asp Ile Leu Asp Glu Ala Asn Gln	
1805 1810 1815	
ctc tta ggt gaa atc aac tca gtc ata gat tat gtc gac gac att	5619

Leu Leu Gly Glu Ile Asn Ser Val Ile Asp Tyr Val Asp Asp Ile	
1820 1825 1830	
aaa act aag ttg cca cca atg tcc gag gag ctg agt gac aaa ata	5664
Lys Thr Lys Leu Pro Pro Met Ser Glu Glu Leu Ser Asp Lys Ile	
1835 1840 1845	
gat gac ctc gcc cag gaa ata aag gac aga agg ctt gct gag aag	5709
Asp Asp Leu Ala Gln Glu Ile Lys Asp Arg Arg Leu Ala Glu Lys	
1850 1855 1860	
gtg ttc cag gct gag agc cat gct gct cag ctg aac gac tcg tct	5754
Val Phe Gln Ala Glu Ser His Ala Ala Gln Leu Asn Asp Ser Ser	
1865 1870 1875	
gct gta ctt gat gga atc ctg gat gag gct aag aac atc tct ttc	5799
Ala Val Leu Asp Gly Ile Leu Asp Glu Ala Lys Asn Ile Ser Phe	
1880 1885 1890	
aat gcc acg gca gcc ttc aga gct tac agt aat att aaa gac tac	5844
Asn Ala Thr Ala Ala Phe Arg Ala Tyr Ser Asn Ile Lys Asp Tyr	
1895 1900 1905	
att gat gaa gct gag aaa gtg gcc aga gaa gcc aaa gag ctt gcc	5889
Ile Asp Glu Ala Glu Lys Val Ala Arg Glu Ala Lys Glu Leu Ala	
1910 1915 1920	
caa ggg gct aca aaa ctg gca aca agt cct cag ggc tta tta aaa	5934
Gln Gly Ala Thr Lys Leu Ala Thr Ser Pro Gln Gly Leu Leu Lys	
1925 1930 1935	
gaa gat gcc aaa ggc tcc ctt cag aaa agc ttc agg atc ctc aat	5979
Glu Asp Ala Lys Gly Ser Leu Gln Lys Ser Phe Arg Ile Leu Asn	
1940 1945 1950	

gaa gcc	aag aag cta gca aac	gat gtg aaa gga aat	cac aat gat	6024
Glu Ala	Lys Lys Leu Ala Asn	Asp Val Lys Gly Asn	His Asn Asp	
1955	1960	1965		
cta aat	gac ctg aaa acc agg	tta gaa act gct gac	ctt aga aac	6069
Leu Asn	Asp Leu Lys Thr Arg	Leu Glu Thr Ala Asp	Leu Arg Asn	
1970	1975	1980		
agt gga	ctt cta gga gct cta	aat gac acc atg gac	aag tta tca	6114
Ser Gly	Leu Leu Gly Ala Leu	Asn Asp Thr Met Asp	Lys Leu Ser	
1985	1990	1995		
gcc att	aca aat gac acg gct	gct aaa ctg cag gct	gtc aaa gag	6159
Ala Ile	Thr Asn Asp Thr Ala	Ala Lys Leu Gln Ala	Val Lys Glu	
2000	2005	2010		
aaa gcc	aga gaa gcc aat gac	aca gca aaa gct gtc	ctg gcc cag	6204
Lys Ala	Arg Glu Ala Asn Asp	Thr Ala Lys Ala Val	Leu Ala Gln	
2015	2020	2025		
gtt aag	gac ctg cat cag aac	cta gat ggc ctg aag	caa aac tac	6249
Val Lys	Asp Leu His Gln Asn	Leu Asp Gly Leu Lys	Gln Asn Tyr	
2030	2035	2040		
aat aaa	ctg gca gac agc gtg	gcc aaa acg aac gct	gtg gtg aaa	6294
Asn Lys	Leu Ala Asp Ser Val	Ala Lys Thr Asn Ala	Val Val Lys	
2045	2050	2055		
gat cct	tcc aaa aac aaa atc	att gca gat gca ggc	act tcc gtg	6339
Asp Pro	Ser Lys Asn Lys Ile	Ile Ala Asp Ala Gly	Thr Ser Val	
2060	2065	2070		
aga aat	cta gaa cag gaa gct	gac cgg cta atc gac	aaa ctc aag	6384

Arg Asn	Leu Glu Gln Glu Ala	Asp Arg Leu Ile Asp	Lys Leu Lys	
2075	2080	2085		
ccc atc	aag gag ctt gag gac	aac cta aag aaa aac	att tct gaa	6429
Pro Ile	Lys Glu Leu Glu Asp	Asn Leu Lys Lys Asn	Ile Ser Glu	
2090	2095	2100		
ata aag	gaa ctg atc aac caa	gct cgg aaa caa gct	aac tct atc	6474
Ile Lys	Glu Leu Ile Asn Gln	Ala Arg Lys Gln Ala	Asn Ser Ile	
2105	2110	2115		
aaa gta	tct gtt tct tcg gga	ggg gac tgt gtt cgg	aca tac agg	6519
Lys Val	Ser Val Ser Ser Gly	Gly Asp Cys Val Arg	Thr Tyr Arg	
2120	2125	2130		
cca gaa	atc aag aaa gga agc	tac aat aac atc gtt	gtc cat gtc	6564
Pro Glu	Ile Lys Lys Gly Ser	Tyr Asn Asn Ile Val	Val His Val	
2135	2140	2145		
aag acc	gct gtt gcc gac aac	ctc ctt ttt tat ctt	gga agt gcc	6609
Lys Thr	Ala Val Ala Asp Asn	Leu Leu Phe Tyr Leu	Gly Ser Ala	
2150	2155	2160		
aaa ttt	att gac ttt ctt gct	ata gaa atg cgc aaa	ggc aaa gtc	6654
Lys Phe	Ile Asp Phe Leu Ala	Ile Glu Met Arg Lys	Gly Lys Val	
2165	2170	2175		
agc ttc	ctc tgg att gtt ggc	tct gga gtt ggc cga	gta ggg ttt	6699
Ser Phe	Leu Trp Ile Val Gly	Ser Gly Val Gly Arg	Val Gly Phe	
2180	2185	2190		
cca gac	ttg acc atc gac gac	tcc tat tgg tac cgt	att gaa gca	6744
Pro Asp	Leu Thr Ile Asp Asp	Ser Tyr Trp Tyr Arg	Ile Glu Ala	
2195	2200	2205		

tca aga	acg gga	aga aat gga	tct att tct	gtg aga	gct tta gat	6789
Ser Arg	Thr Gly	Arg Asn Gly	Ser Ile	Ser Val Arg	Ala Leu Asp	
2210		2215		2220		
gga ccc	aaa gcc	agt atg gta	ccc agc acc	tac cat	tca gtg tct	6834
Gly Pro	Lys Ala	Ser Met Val	Pro Ser	Thr Tyr His	Ser Val Ser	
2225		2230		2235		
cct ccc	ggg tat	act atc cta	gat gtg gat	gca aat	gca atg ctg	6879
Pro Pro	Gly Tyr	Thr Ile Leu	Asp Val	Asp Ala Asn	Ala Met Leu	
2240		2245		2250		
ttt gtt	ggg ggc	ctg acc gga	aaa ata aag	aag gcc	gat gct gta	6924
Phe Val	Gly Gly	Leu Thr Gly	Lys Ile	Lys Lys Ala	Asp Ala Val	
2255		2260		2265		
cgt gtg	atc acc	ttc acc ggc	tgt atg gga	gaa aca	tac ttt gac	6969
Arg Val	Ile Thr	Phe Thr Gly	Cys Met	Gly Glu Thr	Tyr Phe Asp	
2270		2275		2280		
aac aaa	cct ata	ggg tta tgg	aac ttc	cgg gag aaa	gaa ggc gac	7014
Asn Lys	Pro Ile	Gly Leu Trp	Asn Phe	Arg Glu Lys	Glu Gly Asp	
2285		2290		2295		
tgt aag	gga tgt	act gtc agc	cca caa	gtg gaa gat	agt gag ggg	7059
Cys Lys	Gly Cys	Thr Val Ser	Pro Gln	Val Glu Asp	Ser Glu Gly	
2300		2305		2310		
act att	cag ttt	gat ggt gaa	ggc tat	gca tta gtg	agc cgg ccc	7104
Thr Ile	Gln Phe	Asp Gly Glu	Gly Tyr	Ala Leu Val	Ser Arg Pro	
2315		2320		2325		
atc cgc	tgg tac	ccc aac atc	tcc aca	gtc atg ttc	aag ttc cgg	7149

Ile Arg	Trp Tyr	Pro Asn	Ile	Ser Thr	Val Met	Phe	Lys Phe	Arg	
2330		2335			2340				
aca ttt	tca tca	agt gct	ctc	ctg atg	tat ctt	gcc	aca cga	gac	7194
Thr Phe	Ser Ser	Ser Ala	Leu	Leu Met	Tyr Leu	Ala	Thr Arg	Asp	
2345		2350			2355				
ctg aaa	gat ttc	atg agt	gta	gag ctc	agt gat	gga	cat gtg	aaa	7239
Leu Lys	Asp Phe	Met Ser	Val	Glu Leu	Ser Asp	Gly	His Val	Lys	
2360		2365			2370				
gtc agc	tat gac	ctg ggc	tca	gga atg	act tcc	gtt	gtc agc	aat	7284
Val Ser	Tyr Asp	Leu Gly	Ser	Gly Met	Thr Ser	Val	Val Ser	Asn	
2375		2380			2385				
caa aac	cat aat	gat ggg	aaa	tgg aaa	gca ttc	acg	ctg tcg	cgg	7329
Gln Asn	His Asn	Asp Gly	Lys	Trp Lys	Ala Phe	Thr	Leu Ser	Arg	
2390		2395			2400				
att cag	aaa caa	gcc aac	ata	tcg att	gtc gac	atc	gat tct	aac	7374
Ile Gln	Lys Gln	Ala Asn	Ile	Ser Ile	Val Asp	Ile	Asp Ser	Asn	
2405		2410			2415				
cag gag	gag aat	gta gct	act	tca tct	tct gga	aac	aac ttt	ggc	7419
Gln Glu	Glu Asn	Val Ala	Thr	Ser Ser	Ser Gly	Asn	Asn Phe	Gly	
2420		2425			2430				
ctt gac	ttg aaa	gca gat	gac	aaa ata	tat ttt	ggc	ggc ctg	cca	7464
Leu Asp	Leu Lys	Ala Asp	Asp	Lys Ile	Tyr Phe	Gly	Gly Leu	Pro	
2435		2440			2445				
act ctg	aga aac	ttg agt	atg	aaa gca	agg cca	gaa	gtc aat	gtg	7509
Thr Leu	Arg Asn	Leu Ser	Met	Lys Ala	Arg Pro	Glu	Val Asn	Val	
2450		2455			2460				

aag aaa	tac tcc ggc tgc ctc	aaa gat att gaa att	tca aga aca	7554
Lys Lys	Tyr Ser Gly Cys Leu	Lys Asp Ile Glu Ile	Ser Arg Thr	
2465	2470	2475		
cct tac	aat ata ctc agc agc	cct gat tat gtt ggt	gtg acc aaa	7599
Pro Tyr	Asn Ile Leu Ser Ser	Pro Asp Tyr Val Gly	Val Thr Lys	
2480	2485	2490		
ggc tgt	tca ctg gag aat gtt	aat aca gtt agt ttc	ccc aag cct	7644
Gly Cys	Ser Leu Glu Asn Val	Asn Thr Val Ser Phe	Pro Lys Pro	
2495	2500	2505		
ggg ttt	gtg gag ctt gcc gct	gtg tct att gat gtt	gga aca gaa	7689
Gly Phe	Val Glu Leu Ala Ala	Val Ser Ile Asp Val	Gly Thr Glu	
2510	2515	2520		
atc aat	ctg tcc ttt agt acc	agg aac gag tct ggg	atc att ctc	7734
Ile Asn	Leu Ser Phe Ser Thr	Arg Asn Glu Ser Gly	Ile Ile Leu	
2525	2530	2535		
ttg gga	agt gga ggg aca ctc	aca cca ccc agg aga	aaa cgg aga	7779
Leu Gly	Ser Gly Gly Thr Leu	Thr Pro Pro Arg Arg	Lys Arg Arg	
2540	2545	2550		
caa acc	aca cag gct tat tat	gcc ata ttc ctc aac	aag ggc cgc	7824
Gln Thr	Thr Gln Ala Tyr Tyr	Ala Ile Phe Leu Asn	Lys Gly Arg	
2555	2560	2565		
ttg gaa	gtg cat ctc tcc tcg	ggg aca cgg aca atg	agg aaa att	7869
Leu Glu	Val His Leu Ser Ser	Gly Thr Arg Thr Met	Arg Lys Ile	
2570	2575	2580		
gtc atc	aaa ccg gag cca aat	ttg ttt cat gat ggg	aga gaa cat	7914

Val Ile	Lys Pro Glu Pro Asn	Leu Phe His Asp Gly	Arg Glu His	
2585	2590	2595		
tct gtc	cac gta gaa aga acc	aga ggc atc ttc act	gtt caa att	7959
Ser Val	His Val Glu Arg Thr	Arg Gly Ile Phe Thr	Val Gln Ile	
2600	2605	2610		
gat gaa	gac aga aga cat atc	caa aac ctg aca gag	gaa cag ccc	8004
Asp Glu	Asp Arg Arg His Ile	Gln Asn Leu Thr Glu	Glu Gln Pro	
2615	2620	2625		
atc gaa	gtg aaa aag ctc ttt	gtc ggg ggt gct cct	cct gaa ttt	8049
Ile Glu	Val Lys Lys Leu Phe	Val Gly Gly Ala Pro	Pro Glu Phe	
2630	2635	2640		
cag ccc	tcc cca ctc agg aat	att ccg gcc ttt caa	ggc tgt gtg	8094
Gln Pro	Ser Pro Leu Arg Asn	Ile Pro Ala Phe Gln	Gly Cys Val	
2645	2650	2655		
tgg aac	ctt gtt att aac tcc	atc ccc atg gac ttt	gcg cag cct	8139
Trp Asn	Leu Val Ile Asn Ser	Ile Pro Met Asp Phe	Ala Gln Pro	
2660	2665	2670		
ata gcc	ttc aaa aat gcc gac	att ggt cgc tgt acc	tat caa aag	8184
Ile Ala	Phe Lys Asn Ala Asp	Ile Gly Arg Cys Thr	Tyr Gln Lys	
2675	2680	2685		
ccc cgg	gaa gat gag agt gaa	gca gtt cca gct gaa	gtt att gtc	8229
Pro Arg	Glu Asp Glu Ser Glu	Ala Val Pro Ala Glu	Val Ile Val	
2690	2695	2700		
cag cct	cag tcg gtg ccc acc	cct gcc ttc cct ttc	cca gtc ccc	8274
Gln Pro	Gln Ser Val Pro Thr	Pro Ala Phe Pro Phe	Pro Val Pro	
2705	2710	2715		

acc atg	gtg cat	ggc cct	tgt gtt	gca gaa	tca gaa	cca gct	ctt	8319
Thr Met	Val His	Gly Pro	Cys Val	Ala Glu	Ser Glu	Pro Ala	Leu	
2720		2725		2730				
ctg aca	ggg agc	aag cag	ttt ggg	ctt tcc	aga aac	agc cac	att	8364
Leu Thr	Gly Ser	Lys Gln	Phe Gly	Leu Ser	Arg Asn	Ser His	Ile	
2735		2740		2745				
gca att	gtc ttt	gat gac	acc aaa	gtt aaa	aac cgc	ctc acc	att	8409
Ala Ile	Val Phe	Asp Asp	Thr Lys	Val Lys	Asn Arg	Leu Thr	Ile	
2750		2755		2760				
gag ctg	gag gta	cga act	gaa gct	gaa tca	ggc ttg	ctc ttc	tac	8454
Glu Leu	Glu Val	Arg Thr	Glu Ala	Glu Ser	Gly Leu	Leu Phe	Tyr	
2765		2770		2775				
atg ggt	cgg atc	aat cat	gct gat	ttt ggt	act gtt	cag ctg	agg	8499
Met Gly	Arg Ile	Asn His	Ala Asp	Phe Gly	Thr Val	Gln Leu	Arg	
2780		2785		2790				
aat ggg	ttc ccg	ttc ttc	agt tat	gat ttg	ggg agt	ggg agc	acc	8544
Asn Gly	Phe Pro	Phe Phe	Ser Tyr	Asp Leu	Gly Ser	Gly Ser	Thr	
2795		2800		2805				
aga acc	atg atc	ccc aca	aaa atc	aac gat	ggc cag	tgg cac	aag	8589
Arg Thr	Met Ile	Pro Thr	Lys Ile	Asn Asp	Gly Gln	Trp His	Lys	
2810		2815		2820				
att aag	att gtg	aga gtg	aag cag	gag gga	att ctt	tat gtg	gat	8634
Ile Lys	Ile Val	Arg Val	Lys Gln	Glu Gly	Ile Leu	Tyr Val	Asp	
2825		2830		2835				
gat gcc	tcc agc	caa acc	atc agt	ccc aag	aaa gcc	gac atc	ctg	8679

Asp Ala	Ser Ser Gln Thr Ile	Ser Pro Lys Lys Ala	Asp Ile Leu	
2840	2845	2850		
gat gtc	ggg ggg att ctg tat	gtc ggt gga ttg ccg	atc aac tat	8724
Asp Val	Gly Gly Ile Leu Tyr	Val Gly Gly Leu Pro	Ile Asn Tyr	
2855	2860	2865		
acc aca	cgc aga att ggt cca	gtg act tac agc ctg	gat ggc tgt	8769
Thr Thr	Arg Arg Ile Gly Pro	Val Thr Tyr Ser Leu	Asp Gly Cys	
2870	2875	2880		
gtt agg	aat ctt cac atg gaa	caa gcc cct gtt gat	ctg gac cag	8814
Val Arg	Asn Leu His Met Glu	Gln Ala Pro Val Asp	Leu Asp Gln	
2885	2890	2895		
cct acc	tcc agc ttt cac gtt	ggg aca tgc ttt gcg	aat gca gag	8859
Pro Thr	Ser Ser Phe His Val	Gly Thr Cys Phe Ala	Asn Ala Glu	
2900	2905	2910		
agt ggg	act tac ttt gat gga	acc ggt ttt ggt aaa	gca gtt ggt	8904
Ser Gly	Thr Tyr Phe Asp Gly	Thr Gly Phe Gly Lys	Ala Val Gly	
2915	2920	2925		
ggg ttc	atc gtt gga ttg gac	ctt ctt gtg gaa ttt	gaa ttc cgt	8949
Gly Phe	Ile Val Gly Leu Asp	Leu Leu Val Glu Phe	Glu Phe Arg	
2930	2935	2940		
acc aca	aga ccc act ggg gtc	ctc ctg ggg atc agc	agt cag aag	8994
Thr Thr	Arg Pro Thr Gly Val	Leu Leu Gly Ile Ser	Ser Gln Lys	
2945	2950	2955		
atg gat	gga atg ggt att gaa	atg atc gac gag aag	ctt atg ttc	9039
Met Asp	Gly Met Gly Ile Glu	Met Ile Asp Glu Lys	Leu Met Phe	
2960	2965	2970		

cac gtg	gat aat ggc gct ggc	cga ttc act gca att	tat gat gct	9084
His Val	Asp Asn Gly Ala Gly	Arg Phe Thr Ala Ile	Tyr Asp Ala	
2975	2980	2985		
gag atc	cca ggc cac atg tgc	aat gga cag tgg tat	aaa gtc act	9129
Glu Ile	Pro Gly His Met Cys	Asn Gly Gln Trp Tyr	Lys Val Thr	
2990	2995	3000		
gcc aag	aag atc aaa aac cgt	ctt gag ctg gtg gta	gat ggg aac	9174
Ala Lys	Lys Ile Lys Asn Arg	Leu Glu Leu Val Val	Asp Gly Asn	
3005	3010	3015		
cag gtg	gat gcc cag agc cca	aac tca gca tcg aca	tca gct gat	9219
Gln Val	Asp Ala Gln Ser Pro	Asn Ser Ala Ser Thr	Ser Ala Asp	
3020	3025	3030		
aca aac	gac cct gtt ttc gtt	ggc ggt ttc cca ggt	ggc ctc aat	9264
Thr Asn	Asp Pro Val Phe Val	Gly Gly Phe Pro Gly	Gly Leu Asn	
3035	3040	3045		
cag ttt	ggc ctg acc acc aac	att agg ttc cga ggc	tgc atc cga	9309
Gln Phe	Gly Leu Thr Thr Asn	Ile Arg Phe Arg Gly	Cys Ile Arg	
3050	3055	3060		
tct ctg	aag ctc acc aaa ggc	act gca aac cgc tgg	agg tta att	9354
Ser Leu	Lys Leu Thr Lys Gly	Thr Ala Asn Arg Trp	Arg Leu Ile	
3065	3070	3075		
ttg cca	agg ccc tgg aac tgaggggtgt	tcaacctgta tcatgccga		9402
Leu Pro	Arg Pro Trp Asn			
3080				
ctaccttaata aagatagttc aatcctgagg agaattcatc aaaacaagta tatcaagtta				9462

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9511

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<213> Mus musculus

<400> 6

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20 25 30

Gly Glu Lys Gly Pro Glu Met Tyr Cys Lys Leu Val Glu His Val Pro

35 40 45

Gly Gln Pro Val Arg Asn Pro Gln Cys Arg Ile Cys Asn Gln Asn Ser

50 55 60

Ser Asn Pro Tyr Gln Arg His Pro Ile Thr Asn Ala Ile Asp Gly Lys

65 70 75 80

Asn Thr Trp Trp Gln Ser Pro Ser Ile Lys Asn Gly Val Glu Tyr His

85 90 95

Tyr Val Thr Ile Thr Leu Asp Leu Gln Gln Val Phe Gln Ile Ala Tyr
100 105 110

Val Ile Val Lys Ala Ala Asn Ser Pro Arg Pro Gly Asn Trp Ile Leu
115 120 125

Glu Arg Ser Leu Asp Asp Val Glu Tyr Lys Pro Trp Gln Tyr His Ala
130 135 140

Val Thr Asp Thr Glu Cys Leu Thr Leu Tyr Asn Ile Tyr Pro Arg Thr
145 150 155 160

Gly Pro Pro Ser Tyr Ala Lys Asp Asp Glu Val Ile Cys Thr Ser Phe
165 170 175

Tyr Ser Lys Ile His Pro Leu Glu Asn Gly Glu Ile His Ile Ser Leu
180 185 190

Ile Asn Gly Arg Pro Ser Ala Asp Asp Pro Ser Pro Glu Leu Leu Glu
195 200 205

Phe Thr Ser Ala Arg Tyr Ile Arg Leu Arg Phe Gln Arg Ile Arg Thr
210 215 220

Leu Asn Ala Asp Leu Met Met Phe Ala His Lys Asp Pro Arg Glu Ile

225

230

235

240

Asp Pro Ile Val Thr Arg Arg Tyr Tyr Tyr Ser Val Lys Asp Ile Ser

245

250

255

Val Gly Gly Met Cys Ile Cys Tyr Gly His Ala Arg Ala Cys Pro Leu

260

265

270

Asp Pro Ala Thr Asn Lys Ser Arg Cys Glu Cys Glu His Asn Thr Cys

275

280

285

Gly Glu Ser Cys Asp Arg Cys Cys Pro Gly Phe His Gln Lys Pro Trp

290

295

300

Arg Ala Gly Thr Phe Leu Thr Lys Ser Glu Cys Glu Ala Cys Asn Cys

305

310

315

320

His Gly Lys Ala Glu Glu Cys Tyr Tyr Asp Glu Thr Val Ala Ser Arg

325

330

335

Asn Leu Ser Leu Asn Ile His Gly Lys Tyr Ile Gly Gly Gly Val Cys

340

345

350

Ile Asn Cys Thr His Asn Thr Ala Gly Ile Asn Cys Glu Thr Cys Val

355

360

365

Asp Gly Phe Phe Arg Pro Lys Gly Val Ser Pro Asn Tyr Pro Arg Pro
 370 375 380

Cys Gln Pro Cys His Cys Asp Pro Thr Gly Ser Leu Ser Glu Val Cys
 385 390 395 400

Val Lys Asp Glu Lys Tyr Ala Gln Arg Gly Leu Lys Pro Gly Ser Cys
 405 410 415

His Cys Lys Thr Gly Phe Gly Gly Val Asn Cys Asp Arg Cys Val Arg
 420 425 430

Gly Tyr His Gly Tyr Pro Asp Cys Gln Pro Cys Asn Cys Ser Gly Leu
 435 440 445

Gly Ser Thr Asn Glu Asp Pro Cys Val Gly Pro Cys Ser Cys Lys Glu
 450 455 460

Asn Val Glu Gly Glu Asp Cys Ser Arg Cys Lys Ser Gly Phe Phe Asn
 465 470 475 480

Leu Gln Glu Asp Asn Gln Lys Gly Cys Glu Glu Cys Phe Cys Ser Gly
 485 490 495

Val Ser Asn Arg Cys Gln Ser Ser Tyr Trp Thr Tyr Gly Asn Ile Gln

500

505

510

Asp Met Arg Gly Trp Tyr Leu Thr Asp Leu Ser Gly Arg Ile Arg Met
 515 520 525

Ala Pro Gln Leu Asp Asn Pro Asp Ser Pro Gln Gln Ile Ser Ile Ser
 530 535 540

Asn Ser Glu Ala Arg Lys Ser Leu Leu Asp Gly Tyr Tyr Trp Ser Ala
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Pro Pro Pro Tyr Leu Gly Asn Arg Leu Pro Ala Val Gly Gly Gln Leu
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Ser Phe Thr Ile Ser Tyr Asp Leu Glu Glu Glu Glu Asp Asp Thr Glu
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Lys Leu Leu Gln Leu Met Ile Ile Phe Glu Gly Asn Asp Leu Arg Ile
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Ser Thr Ala Tyr Lys Glu Val Tyr Leu Glu Pro Ser Glu Glu His Val
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Glu Glu Val Ser Leu Lys Glu Glu Ala Phe Thr Ile His Gly Thr Asn
 625 630 635 640

Leu Pro Val Thr Arg Lys Asp Phe Met Ile Val Leu Thr Asn Leu Gly
 645 650 655

Glu Ile Leu Ile Gln Ile Thr Tyr Asn Leu Gly Met Asp Ala Ile Phe
 660 665 670

Arg Leu Ser Ser Val Asn Leu Glu Ser Pro Val Pro Tyr Pro Thr Asp
 675 680 685

Arg Arg Ile Ala Thr Asp Val Glu Val Cys Gln Cys Pro Pro Gly Tyr
 690 695 700

Ser Gly Ser Ser Cys Glu Thr Cys Trp Pro Arg His Arg Arg Val Asn
 705 710 715 720

Gly Thr Ile Phe Gly Gly Ile Cys Glu Pro Cys Gln Cys Phe Ala His
 725 730 735

Ala Glu Ala Cys Asp Asp Ile Thr Gly Glu Cys Leu Asn Cys Lys Asp
 740 745 750

His Thr Gly Gly Pro Tyr Cys Asn Glu Cys Leu Pro Gly Phe Tyr Gly
 755 760 765

Asp Pro Thr Arg Gly Ser Pro Glu Asp Cys Gln Pro Cys Ala Cys Pro

770

775

780

Leu Asn Ile Pro Ser Asn Asn Phe Ser Pro Thr Cys His Leu Asp Arg
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Ser Leu Gly Leu Ile Cys Asp Glu Cys Pro Ile Gly Tyr Thr Gly Pro
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Arg Cys Glu Arg Cys Ala Glu Gly Tyr Phe Gly Gln Pro Ser Val Pro
 820 825 830

Gly Gly Ser Cys Gln Pro Cys Gln Cys Asn Asp Asn Leu Asp Tyr Ser
 835 840 845

Ile Pro Gly Ser Cys Asp Ser Leu Ser Gly Ser Cys Leu Ile Cys Lys
 850 855 860

Pro Gly Thr Thr Gly Arg Tyr Cys Glu Leu Cys Ala Asp Gly Tyr Phe
 865 870 875 880

Gly Asp Ala Val Asn Thr Lys Asn Cys Gln Pro Cys Arg Cys Asp Ile
 885 890 895

Asn Gly Ser Phe Ser Glu Asp Cys His Thr Arg Thr Gly Gln Cys Glu
 900 905 910

Cys Arg Pro Asn Val Gln Gly Arg His Cys Asp Glu Cys Lys Pro Glu
 915 920 925

Thr Phe Gly Leu Gln Leu Gly Arg Gly Cys Leu Pro Cys Asn Cys Asn
 930 935 940

Ser Phe Gly Ser Lys Ser Phe Asp Cys Glu Ala Ser Gly Gln Cys Trp
 945 950 955 960

Cys Gln Pro Gly Val Ala Gly Lys Lys Cys Asp Arg Cys Ala His Gly
 965 970 975

Tyr Phe Asn Phe Gln Glu Gly Gly Cys Ile Ala Cys Asp Cys Ser His
 980 985 990

Leu Gly Asn Asn Cys Asp Pro Lys Thr Gly Gln Cys Ile Cys Pro Pro
 995 1000 1005

Asn Thr Thr Gly Glu Lys Cys Ser Glu Cys Leu Pro Asn Thr Trp
 1010 1015 1020

Gly His Ser Ile Val Thr Gly Cys Lys Val Cys Asn Cys Ser Thr
 1025 1030 1035

Val Gly	Ser Leu Ala	Ser Gln	Cys Asn Val	Asn Thr	Gly Gln Cys
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Ser Cys	His Pro Lys	Phe Ser	Gly Met Lys	Cys Ser	Glu Cys Ser
1055		1060			1065

Arg Gly	His Trp Asn	Tyr Pro	Leu Cys Thr	Leu Cys	Asp Cys Phe
1070		1075			1080

Leu Pro	Gly Thr Asp	Ala Thr	Thr Cys Asp	Leu Glu	Thr Arg Lys
1085		1090			1095

Cys Ser	Cys Ser Asp	Gln Thr	Gly Gln Cys	Ser Cys	Lys Val Asn
1100		1105			1110

Val Glu	Gly Val His	Cys Asp	Arg Cys Arg	Pro Gly	Lys Phe Gly
1115		1120			1125

Leu Asp	Ala Lys Asn	Pro Leu	Gly Cys Ser	Ser Cys	Tyr Cys Phe
1130		1135			1140

Gly Val	Thr Ser Gln	Cys Ser	Glu Ala Lys	Gly Leu	Ile Arg Thr
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Trp Val	Thr Leu Ser	Asp Glu	Gln Thr Ile	Leu Pro	Leu Val Asp
1160		1165			1170

Glu	Ala	Leu	Gln	His	Thr	Thr	Thr	Lys	Gly	Ile	Ala	Phe	Gln	Lys
1175							1180							1185

Pro	Glu	Ile	Val	Ala	Lys	Met	Asp	Glu	Val	Arg	Gln	Glu	Leu	His
1190							1195							1200

Leu	Glu	Pro	Phe	Tyr	Trp	Lys	Leu	Pro	Gln	Gln	Phe	Glu	Gly	Lys
1205							1210							1215

Lys	Leu	Met	Ala	Tyr	Gly	Gly	Lys	Leu	Lys	Tyr	Ala	Ile	Tyr	Phe
1220							1225							1230

Glu	Ala	Arg	Asp	Glu	Thr	Gly	Phe	Ala	Thr	Tyr	Lys	Pro	Gln	Val
1235							1240							1245

Ile	Ile	Arg	Gly	Gly	Thr	Pro	Thr	His	Ala	Arg	Ile	Ile	Thr	Arg
1250							1255							1260

His	Met	Ala	Ala	Pro	Leu	Ile	Gly	Gln	Leu	Thr	Arg	His	Glu	Ile
1265							1270							1275

Glu	Met	Thr	Glu	Lys	Glu	Trp	Lys	Tyr	Tyr	Gly	Asp	Asp	Pro	Arg
1280							1285							1290

Ile Ser	Arg Thr	Val Thr	Arg	Glu Asp	Phe Leu	Asp	Ile Leu	Tyr
1295			1300			1305		

Asp Ile	His Tyr	Ile Leu	Ile	Lys Ala	Thr Tyr	Gly	Asn Val	Val
1310			1315			1320		

Arg Gln	Ser Arg	Ile Ser	Glu	Ile Ser	Met Glu	Val	Ala Glu	Pro
1325			1330			1335		

Gly His	Val Leu	Ala Gly	Ser	Pro Pro	Ala His	Leu	Ile Glu	Arg
1340			1345			1350		

Cys Asp	Cys Pro	Pro Gly	Tyr	Ser Gly	Leu Ser	Cys	Glu Thr	Cys
1355			1360			1365		

Ala Pro	Gly Phe	Tyr Arg	Leu	Arg Ser	Glu Pro	Gly	Gly Arg	Thr
1370			1375			1380		

Pro Gly	Pro Thr	Leu Gly	Thr	Cys Val	Pro Cys	Gln	Cys Asn	Gly
1385			1390			1395		

His Ser	Ser Gln	Cys Asp	Pro	Glu Thr	Ser Val	Cys	Gln Asn	Cys
1400			1405			1410		

Gln His	His Thr	Ala Gly	Asp	Phe Cys	Glu Arg	Cys	Ala Leu	Gly
1415			1420			1425		

Tyr Tyr Gly Ile Val Arg Gly Leu Pro Asn Asp Cys Gln Pro Cys
 1430 1435 1440

Ala Cys Pro Leu Ile Ser Pro Ser Asn Asn Phe Ser Pro Ser Cys
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Val Leu Glu Gly Leu Glu Asp Tyr Arg Cys Thr Ala Cys Pro Arg
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Gly Tyr Glu Gly Gln Tyr Cys Glu Arg Cys Ala Pro Gly Tyr Thr
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Gly Ser Pro Ser Ser Pro Gly Gly Ser Cys Gln Glu Cys Glu Cys
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Asp Pro Tyr Gly Ser Leu Pro Val Pro Cys Asp Arg Val Thr Gly
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Leu Cys Thr Cys Arg Pro Gly Ala Thr Gly Arg Lys Cys Asp Gly
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Cys Glu His Trp His Ala Arg Glu Gly Ala Glu Cys Val Phe Cys
 1535 1540 1545

Gly Asp Glu Cys Thr Gly Leu Leu Leu Gly Asp Leu Ala Arg Leu
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Glu Gln Met Thr Met Asn Ile Asn Leu Thr Gly Pro Leu Pro Ala
 1565 1570 1575

Pro Tyr Lys Ile Leu Tyr Gly Leu Glu Asn Thr Thr Gln Glu Leu
 1580 1585 1590

Lys His Leu Leu Ser Pro Gln Arg Ala Pro Glu Arg Leu Ile Gln
 1595 1600 1605

Leu Ala Glu Gly Asn Val Asn Thr Leu Val Met Glu Thr Asn Glu
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Leu Leu Thr Arg Ala Thr Lys Val Thr Ala Asp Gly Glu Gln Thr
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Gly Gln Asp Ala Glu Arg Thr Asn Ser Arg Ala Glu Ser Leu Glu
 1640 1645 1650

Glu Phe Ile Lys Gly Leu Val Gln Asp Ala Glu Ala Ile Asn Glu
 1655 1660 1665

Lys Ala Val Lys Leu Asn Glu Thr Leu Gly Asn Gln Asp Lys Thr
 1670 1675 1680

Ala Glu	Arg Asn	Leu Glu	Glu	Leu Gln	Lys Glu	Ile	Asp Arg	Met
1685		1690			1695			

Leu Lys	Glu Leu	Arg Ser	Lys	Asp Leu	Gln Thr	Gln	Lys Glu	Val
1700		1705			1710			

Ala Glu	Asp Glu	Leu Val	Ala	Ala Glu	Gly Leu	Leu	Lys Arg	Val
1715		1720			1725			

Asn Lys	Leu Phe	Gly Glu	Pro	Arg Ala	Gln Asn	Glu	Asp Met	Glu
1730		1735			1740			

Lys Asp	Leu Gln	Gln Lys	Leu	Ala Glu	Tyr Lys	Asn	Lys Leu	Asp
1745		1750			1755			

Asp Ala	Trp Asp	Leu Leu	Arg	Glu Ala	Thr Asp	Lys	Thr Arg	Asp
1760		1765			1770			

Ala Asn	Arg Leu	Ser Ala	Ala	Asn Gln	Lys Asn	Met	Thr Ile	Leu
1775		1780			1785			

Glu Thr	Lys Lys	Glu Ala	Ile	Glu Gly	Ser Lys	Arg	Gln Ile	Glu
1790		1795			1800			

Asn Thr Leu Lys Glu Gly Asn Asp Ile Leu Asp Glu Ala Asn Gln
 1805 1810 1815

Leu Leu Gly Glu Ile Asn Ser Val Ile Asp Tyr Val Asp Asp Ile
 1820 1825 1830

Lys Thr Lys Leu Pro Pro Met Ser Glu Glu Leu Ser Asp Lys Ile
 1835 1840 1845

Asp Asp Leu Ala Gln Glu Ile Lys Asp Arg Arg Leu Ala Glu Lys
 1850 1855 1860

Val Phe Gln Ala Glu Ser His Ala Ala Gln Leu Asn Asp Ser Ser
 1865 1870 1875

Ala Val Leu Asp Gly Ile Leu Asp Glu Ala Lys Asn Ile Ser Phe
 1880 1885 1890

Asn Ala Thr Ala Ala Phe Arg Ala Tyr Ser Asn Ile Lys Asp Tyr
 1895 1900 1905

Ile Asp Glu Ala Glu Lys Val Ala Arg Glu Ala Lys Glu Leu Ala
 1910 1915 1920

Gln Gly Ala Thr Lys Leu Ala Thr Ser Pro Gln Gly Leu Leu Lys
 1925 1930 1935

Glu Asp	Ala Lys Gly	Ser Leu	Gln Lys Ser Phe Arg	Ile Leu Asn
1940		1945		1950

Glu Ala	Lys Lys Leu	Ala Asn	Asp Val Lys Gly Asn	His Asn Asp
1955		1960		1965

Leu Asn	Asp Leu Lys Thr Arg	Leu Glu Thr Ala Asp	Leu Arg Asn
1970		1975	1980

Ser Gly	Leu Leu Gly	Ala Leu	Asn Asp Thr Met Asp	Lys Leu Ser
1985		1990		1995

Ala Ile	Thr Asn Asp Thr Ala	Ala Lys Leu Gln Ala	Val Lys Glu
2000		2005	2010

Lys Ala	Arg Glu Ala Asn Asp	Thr Ala Lys Ala Val	Leu Ala Gln
2015		2020	2025

Val Lys	Asp Leu His Gln Asn	Leu Asp Gly Leu Lys	Gln Asn Tyr
2030		2035	2040

Asn Lys	Leu Ala Asp Ser Val	Ala Lys Thr Asn Ala	Val Val Lys
2045		2050	2055

Asp Pro Ser Lys Asn Lys Ile Ile Ala Asp Ala Gly Thr Ser Val
 2060 2065 2070

Arg Asn Leu Glu Gln Glu Ala Asp Arg Leu Ile Asp Lys Leu Lys
 2075 2080 2085

Pro Ile Lys Glu Leu Glu Asp Asn Leu Lys Lys Asn Ile Ser Glu
 2090 2095 2100

Ile Lys Glu Leu Ile Asn Gln Ala Arg Lys Gln Ala Asn Ser Ile
 2105 2110 2115

Lys Val Ser Val Ser Ser Gly Gly Asp Cys Val Arg Thr Tyr Arg
 2120 2125 2130

Pro Glu Ile Lys Lys Gly Ser Tyr Asn Asn Ile Val Val His Val
 2135 2140 2145

Lys Thr Ala Val Ala Asp Asn Leu Leu Phe Tyr Leu Gly Ser Ala
 2150 2155 2160

Lys Phe Ile Asp Phe Leu Ala Ile Glu Met Arg Lys Gly Lys Val
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Ser Phe Leu Trp Ile Val Gly Ser Gly Val Gly Arg Val Gly Phe
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Pro Asp Leu Thr Ile Asp Asp Ser Tyr Trp Tyr Arg Ile Glu Ala
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Ser Arg Thr Gly Arg Asn Gly Ser Ile Ser Val Arg Ala Leu Asp
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Pro Pro Gly Tyr Thr Ile Leu Asp Val Asp Ala Asn Ala Met Leu
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Arg Val Ile Thr Phe Thr Gly Cys Met Gly Glu Thr Tyr Phe Asp
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Asn Lys Pro Ile Gly Leu Trp Asn Phe Arg Glu Lys Glu Gly Asp
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Cys Lys Gly Cys Thr Val Ser Pro Gln Val Glu Asp Ser Glu Gly
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Thr Ile Gln Phe Asp Gly Glu Gly Tyr Ala Leu Val Ser Arg Pro
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Ile Arg Trp Tyr Pro Asn Ile Ser Thr Val Met Phe Lys Phe Arg
 2330 2335 2340

Thr Phe Ser Ser Ser Ala Leu Leu Met Tyr Leu Ala Thr Arg Asp
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Leu Lys Asp Phe Met Ser Val Glu Leu Ser Asp Gly His Val Lys
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Val Ser Tyr Asp Leu Gly Ser Gly Met Thr Ser Val Val Ser Asn
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Gln Asn His Asn Asp Gly Lys Trp Lys Ala Phe Thr Leu Ser Arg
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Ile Gln Lys Gln Ala Asn Ile Ser Ile Val Asp Ile Asp Ser Asn
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Gln Glu Glu Asn Val Ala Thr Ser Ser Ser Gly Asn Asn Phe Gly
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Leu Asp Leu Lys Ala Asp Asp Lys Ile Tyr Phe Gly Gly Leu Pro
 2435 2440 2445

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Lys	Lys	Tyr	Ser	Gly	Cys	Leu	Lys	Asp	Ile	Glu	Ile	Ser	Arg	Thr
2465						2470				2475				

Pro	Tyr	Asn	Ile	Leu	Ser	Ser	Pro	Asp	Tyr	Val	Gly	Val	Thr	Lys
2480						2485				2490				

Gly	Cys	Ser	Leu	Glu	Asn	Val	Asn	Thr	Val	Ser	Phe	Pro	Lys	Pro
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Gly	Phe	Val	Glu	Leu	Ala	Ala	Val	Ser	Ile	Asp	Val	Gly	Thr	Glu
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Ile	Asn	Leu	Ser	Phe	Ser	Thr	Arg	Asn	Glu	Ser	Gly	Ile	Ile	Leu
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Leu	Gly	Ser	Gly	Gly	Thr	Leu	Thr	Pro	Pro	Arg	Arg	Lys	Arg	Arg
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Gln	Thr	Thr	Gln	Ala	Tyr	Tyr	Ala	Ile	Phe	Leu	Asn	Lys	Gly	Arg
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Ser Val His Val Glu Arg Thr Arg Gly Ile Phe Thr Val Gln Ile
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Ile Glu Val Lys Lys Leu Phe Val Gly Gly Ala Pro Pro Glu Phe
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Gln Pro Ser Pro Leu Arg Asn Ile Pro Ala Phe Gln Gly Cys Val
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Leu Thr Gly Ser Lys Gln Phe Gly Leu Ser Arg Asn Ser His Ile
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Ala Ile Val Phe Asp Asp Thr Lys Val Lys Asn Arg Leu Thr Ile
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Glu Leu Glu Val Arg Thr Glu Ala Glu Ser Gly Leu Leu Phe Tyr
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Met Gly Arg Ile Asn His Ala Asp Phe Gly Thr Val Gln Leu Arg
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Asn Gly Phe Pro Phe Phe Ser Tyr Asp Leu Gly Ser Gly Ser Thr
 2795 2800 2805

Arg Thr Met Ile Pro Thr Lys Ile Asn Asp Gly Gln Trp His Lys
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Ile Lys	Ile Val Arg Val Lys	Gln Glu Gly Ile Leu Tyr Val Asp
2825	2830	2835

Asp Ala	Ser Ser Gln Thr Ile	Ser Pro Lys Lys Ala Asp Ile Leu
2840	2845	2850

Asp Val	Gly Gly Ile Leu Tyr	Val Gly Gly Leu Pro Ile Asn Tyr
2855	2860	2865

Thr Thr	Arg Arg Ile Gly Pro	Val Thr Tyr Ser Leu Asp Gly Cys
2870	2875	2880

Val Arg	Asn Leu His Met Glu	Gln Ala Pro Val Asp Leu Asp Gln
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Pro Thr	Ser Ser Phe His Val	Gly Thr Cys Phe Ala Asn Ala Glu
2900	2905	2910

Ser Gly	Thr Tyr Phe Asp Gly	Thr Gly Phe Gly Lys Ala Val Gly
2915	2920	2925

Gly Phe	Ile Val Gly Leu Asp	Leu Leu Val Glu Phe Glu Phe Arg
2930	2935	2940

Thr Thr	Arg Pro Thr Gly Val	Leu Leu Gly Ile Ser Ser Gln Lys
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Met Asp Gly Met Gly Ile Glu	Met Ile Asp Glu Lys	Leu Met Phe
2960	2965	2970
His Val Asp Asn Gly Ala Gly	Arg Phe Thr Ala Ile	Tyr Asp Ala
2975	2980	2985
Glu Ile Pro Gly His Met Cys	Asn Gly Gln Trp Tyr	Lys Val Thr
2990	2995	3000
Ala Lys Lys Ile Lys Asn Arg	Leu Glu Leu Val Val	Asp Gly Asn
3005	3010	3015
Gln Val Asp Ala Gln Ser Pro	Asn Ser Ala Ser Thr	Ser Ala Asp
3020	3025	3030
Thr Asn Asp Pro Val Phe Val	Gly Gly Phe Pro Gly	Gly Leu Asn
3035	3040	3045
Gln Phe Gly Leu Thr Thr Asn	Ile Arg Phe Arg Gly	Cys Ile Arg
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Ser Leu Lys Leu Thr Lys Gly	Thr Ala Asn Arg Trp	Arg Leu Ile
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Leu Pro Arg Pro Trp Asn

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Gly Glu Pro Gly Arg Gly Arg Gln Gly Gln Pro Leu Pro Trp Glu Leu

10

15

20

cgc ttg ggc cta ctt cta agt gtg ctg gct gcc aca ttg gcc cag gcc 152

Arg Leu Gly Leu Leu Leu Ser Val Leu Ala Ala Thr Leu Ala Gln Ala

25

30

35

ccg tcc ttg gat gta cct ggc tgt tct cga gga agc tgc tat cca gcc 200

Pro Ser Leu Asp Val Pro Gly Cys Ser Arg Gly Ser Cys Tyr Pro Ala

40

45

50

acc ggt gac ctg ttg gtg ggc cgt gcg gac aga ctg acg gcc tca tcc 248

Thr	Gly	Asp	Leu	Leu	Val	Gly	Arg	Ala	Asp	Arg	Leu	Thr	Ala	Ser	Ser	
55					60				65							
acg	tgt	ggc	ttg	cat	agc	cct	caa	ccc	tac	tgt	att	gtc	agt	cac	ctg	296
Thr	Cys	Gly	Leu	His	Ser	Pro	Gln	Pro	Tyr	Cys	Ile	Val	Ser	His	Leu	
70				75				80				85				
cag	gac	gaa	aag	aag	tgt	ttc	ctg	tgt	gac	tcc	cga	cgt	ccc	ttc	tct	344
Gln	Asp	Glu	Lys	Lys	Cys	Phe	Leu	Cys	Asp	Ser	Arg	Arg	Pro	Phe	Ser	
			90				95				100					
gct	cga	gac	aac	cca	aat	agt	cat	cgg	atc	cag	aat	gta	gtc	acc	agc	392
Ala	Arg	Asp	Asn	Pro	Asn	Ser	His	Arg	Ile	Gln	Asn	Val	Val	Thr	Ser	
			105				110				115					
ttt	gcg	cca	caa	cgc	cgg	acg	gcc	tgg	tgg	caa	tcg	gag	aac	ggg	gtt	440
Phe	Ala	Pro	Gln	Arg	Arg	Thr	Ala	Trp	Trp	Gln	Ser	Glu	Asn	Gly	Val	
			120				125				130					
cca	atg	gtc	acc	atc	caa	ctg	gac	ctg	gaa	gct	gag	ttt	cat	ttc	acc	488
Pro	Met	Val	Thr	Ile	Gln	Leu	Asp	Leu	Glu	Ala	Glu	Phe	His	Phe	Thr	
			135				140				145					
cac	ctc	att	atg	acg	ttc	aag	acg	ttc	cgg	cct	gct	gct	atg	ctg	gtg	536
His	Leu	Ile	Met	Thr	Phe	Lys	Thr	Phe	Arg	Pro	Ala	Ala	Met	Leu	Val	
150				155				160				165				
gag	cgt	tct	gca	gac	ttt	ggc	cgc	acc	tgg	cac	gtg	tac	cga	tat	ttt	584
Glu	Arg	Ser	Ala	Asp	Phe	Gly	Arg	Thr	Trp	His	Val	Tyr	Arg	Tyr	Phe	
			170				175				180					
tcc	tat	gac	tgc	ggg	gct	gac	ttc	ccg	gga	atc	cca	ctg	gcc	ccg	cca	632
Ser	Tyr	Asp	Cys	Gly	Ala	Asp	Phe	Pro	Gly	Ile	Pro	Leu	Ala	Pro	Pro	
			185				190				195					

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Pro Ser Thr Glu Gly Glu Val Ile Tyr Arg Val Leu Asp Pro Ala Ile	
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cct atc cca gac ccc tac agc tca cgg att cag aac ctg ttg aag atc	776
Pro Ile Pro Asp Pro Tyr Ser Ser Arg Ile Gln Asn Leu Leu Lys Ile	
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Thr Asn Leu Arg Val Asn Leu Thr Arg Leu His Thr Leu Gly Asp Asn	
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Leu Leu Asp Pro Arg Arg Glu Ile Arg Glu Lys Tyr Tyr Tyr Ala Leu	
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Tyr Glu Leu Val Ile Arg Gly Asn Cys Phe Cys Tyr Gly His Ala Ser	
280 285 290	
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Gln Cys Ala Pro Ala Pro Gly Ala Pro Ala His Ala Glu Gly Met Val	
295 300 305	
cac gga gcc tgt atc tgc aag cac aat act cgt gga ctc aac tgt gag	1016
His Gly Ala Cys Ile Cys Lys His Asn Thr Arg Gly Leu Asn Cys Glu	
310 315 320 325	
cag tgt cag gat ttc tat cag gac ctt ccc tgg cac cct gca gag gac	1064

Gln Cys Gln Asp Phe Tyr Gln Asp Leu Pro Trp His Pro Ala Glu Asp	
330 335 340	
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Gly His Thr His Ala Cys Arg Lys Cys Glu Cys Asn Gly His Thr His	
345 350 355	
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Ser Cys His Phe Asp Met Ala Val Tyr Leu Ala Ser Gly Asn Val Ser	
360 365 370	
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Gly Gly Val Cys Asp Gly Cys Gln His Asn Thr Ala Gly Arg His Cys	
375 380 385	
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Glu Phe Cys Arg Pro Phe Phe Tyr Arg Asp Pro Thr Lys Asp Met Arg	
390 395 400 405	
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Asp Pro Ala Val Cys Arg Pro Cys Asp Cys Asp Pro Met Gly Ser Gln	
410 415 420	
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Asp Gly Gly Arg Cys Asp Ser His Asp Asp Pro Val Leu Gly Leu Val	
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Ser Gly Gln Cys Arg Cys Lys Glu His Val Val Gly Thr Arg Cys Gln	
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Gln Cys Arg Asp Gly Phe Phe Gly Leu Ser Ala Ser Asp Pro Arg Gly	
455 460 465	

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Cys Gln Arg Cys Gln Cys Asn Ser Arg Gly Thr Val Pro Gly Ser Ser	
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Pro Cys Asp Ser Ser Ser Gly Thr Cys Phe Cys Lys Arg Leu Val Thr	
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Gly His Gly Cys Asp Arg Cys Leu Pro Gly His Trp Gly Leu Ser His	
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Asp Leu Leu Gly Cys Arg Pro Cys Asp Cys Asp Val Gly Gly Ala Leu	
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Asp Pro Gln Cys Asp Glu Ala Thr Gly Gln Cys Arg Cys Arg Gln His	
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Phe Leu Asp His Leu Thr Trp Glu Ala Glu Ala Ala Gln Gly Gln Gly	
570 575 580	
ctt gag gtg gta gag cgg ctg gtg acc aac cga gag act ccg tcc tgg	1832
Leu Glu Val Val Glu Arg Leu Val Thr Asn Arg Glu Thr Pro Ser Trp	
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Thr Gly Pro Gly Phe Val Arg Leu Arg Glu Gly Gln Glu Val Glu Phe	
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Leu Val Thr Ser Leu Pro Arg Ala Met Asp Tyr Asp Leu Leu Leu Arg	
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Trp Glu Pro Gln Val Pro Glu Gln Trp Ala Glu Leu Glu Leu Met Val	
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Ser Ala Leu Ile Tyr Asn Gly Ala Leu Pro Cys Gln Cys Asp Pro Gln	
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Tyr Gly Phe Gly Pro Ala Gly Cys Gln Ala Cys Gln Cys Ser Pro Asp	
825 830 835	
gga gca ctc agt gcc ctc tgt gaa ggg act agt gga cag tgc ccc tgc	2600
Gly Ala Leu Ser Ala Leu Cys Glu Gly Thr Ser Gly Gln Cys Pro Cys	
840 845 850	
cga cct ggt gcc ttt ggt ctt cgc tgt gac cac tgt caa cgt ggc cag	2648
Arg Pro Gly Ala Phe Gly Leu Arg Cys Asp His Cys Gln Arg Gly Gln	
855 860 865	
tgg gga ttc cct aat tgc cgg ccg tgt gtc tgc aat ggg cgt gcg gat	2696

Trp	Gly	Phe	Pro	Asn	Cys	Arg	Pro	Cys	Val	Cys	Asn	Gly	Arg	Ala	Asp	
870					875				880				885			
gag tgt gat acc cac aca ggc gct tgc ctg ggc tgc cgt gat tac acg																2744
Glu	Cys	Asp	Thr	His	Thr	Gly	Ala	Cys	Leu	Gly	Cys	Arg	Asp	Tyr	Thr	
			890					895				900				
ggg ggc gag cac tgt gaa agg tgc att gct ggt ttt cat ggg gac cca																2792
Gly	Gly	Glu	His	Cys	Glu	Arg	Cys	Ile	Ala	Gly	Phe	His	Gly	Asp	Pro	
			905					910				915				
cgg ctg cca tat ggg ggc cag tgc cgg cct tgt ccc tgc cct gaa ggc																2840
Arg	Leu	Pro	Tyr	Gly	Gly	Gln	Cys	Arg	Pro	Cys	Pro	Cys	Pro	Glu	Gly	
			920					925				930				
cct ggg agc cag cga cac ttt gct act tct tgc cac cgg gat gga tat																2888
Pro	Gly	Ser	Gln	Arg	His	Phe	Ala	Thr	Ser	Cys	His	Arg	Asp	Gly	Tyr	
			935					940				945				
tcc cag caa att gtg tgc cag tgt cga gaa ggc tac aca ggg ctt cgg																2936
Ser	Gln	Gln	Ile	Val	Cys	Gln	Cys	Arg	Glu	Gly	Tyr	Thr	Gly	Leu	Arg	
			950					955				960				
tgt gaa gct tgt gcc ccc ggg cac ttt ggg gac cca tca aag cca ggt																2984
Cys	Glu	Ala	Cys	Ala	Pro	Gly	His	Phe	Gly	Asp	Pro	Ser	Lys	Pro	Gly	
			970					975				980				
ggc agg tgc caa ctg tgt gag tgc agt gga aac att gat ccc atg gac																3032
Gly	Arg	Cys	Gln	Leu	Cys	Glu	Cys	Ser	Gly	Asn	Ile	Asp	Pro	Met	Asp	
			985					990				995				
cct gat gcc tgt gat ccc cac acg ggg caa tgc ttg cgt tgt tta																3077
Pro	Asp	Ala	Cys	Asp	Pro	His	Thr	Gly	Gln	Cys	Leu	Arg	Cys	Leu		
			1000					1005				1010				

cac aac aca	gag ggg ccc cac tgt	ggc tat tgc aag cct	ggc ttc	3122
His Asn Thr	Glu Gly Pro His Cys	Gly Tyr Cys Lys Pro	Gly Phe	
1015	1020	1025		
cat ggg caa	gct gcc cga cag agc	tgt cac cgc tgt acc	tgc aac	3167
His Gly Gln	Ala Ala Arg Gln Ser	Cys His Arg Cys Thr	Cys Asn	
1030	1035	1040		
ctt ctg ggc	aca gat ccc agg cgg	tgc cca tct acc gac	ctg tgc	3212
Leu Leu Gly	Thr Asp Pro Arg Arg	Cys Pro Ser Thr Asp	Leu Cys	
1045	1050	1055		
cat tgt gac	cca agc act ggg cag	tgc cca tgc ctt ccc	cat gtc	3257
His Cys Asp	Pro Ser Thr Gly Gln	Cys Pro Cys Leu Pro	His Val	
1060	1065	1070		
caa ggc ctc	aac tgt gac cat tgt	gcc ccc aac ttt tgg	aac ttc	3302
Gln Gly Leu	Asn Cys Asp His Cys	Ala Pro Asn Phe Trp	Asn Phe	
1075	1080	1085		
acc agt ggc	cgt ggc tgc cag cct	tgt gct tgt cac cca	agc cgg	3347
Thr Ser Gly	Arg Gly Cys Gln Pro	Cys Ala Cys His Pro	Ser Arg	
1090	1095	1100		
gcc aga ggc	cct acc tgc aat gag	ttc aca ggg cag tgt	cac tgt	3392
Ala Arg Gly	Pro Thr Cys Asn Glu	Phe Thr Gly Gln Cys	His Cys	
1105	1110	1115		
cat gct ggc	ttt ggt ggg agg act	tgt tct gag tgc caa	gag ctc	3437
His Ala Gly	Phe Gly Gly Arg Thr	Cys Ser Glu Cys Gln	Glu Leu	
1120	1125	1130		
tac tgg gga	gac cct ggt ctg cag	tgc cgt gcc tgt gac	tgt gat	3482

Tyr Trp Gly	Asp Pro Gly	Leu Gln	Cys Arg Ala	Cys Asp	Cys Asp	
1135		1140		1145		
cct aga gga	ata gac aaa	cct cag	tgt cat cgt	tcc aca	ggc cac	3527
Pro Arg Gly	Ile Asp Lys	Pro Gln	Cys His Arg	Ser Thr	Gly His	
1150		1155		1160		
tgt agc tgc	cgc cca ggc	gtg tct	ggg gtg cgc	tgt gac	cag tgt	3572
Cys Ser Cys	Arg Pro Gly	Val Ser	Gly Val Arg	Cys Asp	Gln Cys	
1165		1170		1175		
gct cgt ggc	ttc tca ggg	gtt ttt	cct gct tgt	cac ccc	tgc cac	3617
Ala Arg Gly	Phe Ser Gly	Val Phe	Pro Ala Cys	His Pro	Cys His	
1180		1185		1190		
gct tgc ttt	gga gac tgg	gat cgt	gtg gta cag	gac ctg	gct gct	3662
Ala Cys Phe	Gly Asp Trp	Asp Arg	Val Val Gln	Asp Leu	Ala Ala	
1195		1200		1205		
cgg acg cgg	cgc ctg gag	cag tgg	gct cag gag	ttg cag	caa aca	3707
Arg Thr Arg	Arg Leu Glu	Gln Trp	Ala Gln Glu	Leu Gln	Gln Thr	
1210		1215		1220		
gga gtg ctg	ggg gcc ttt	gag agc	agc ttt ttg	aac atg	cag ggg	3752
Gly Val Leu	Gly Ala Phe	Glu Ser	Ser Phe Leu	Asn Met	Gln Gly	
1225		1230		1235		
aag cta ggc	atg gtg cag	gcc att	atg agt gcc	cgc aat	gcc tca	3797
Lys Leu Gly	Met Val Gln	Ala Ile	Met Ser Ala	Arg Asn	Ala Ser	
1240		1245		1250		
gcc gcc tct	acg gcg aag	ctt gta	gag gcc aca	gag gga	cta cgt	3842
Ala Ala Ser	Thr Ala Lys	Leu Val	Glu Ala Thr	Glu Gly	Leu Arg	
1255		1260		1265		

cat gaa atc	ggg aag acc acc gag	cgc ctg act cag tta	gaa gca	3887
His Glu Ile	Gly Lys Thr Thr Glu	Arg Leu Thr Gln Leu	Glu Ala	
1270	1275	1280		
gag cta aca	gct gtg cag gat gag	aac ttc aat gcc aac	cat gca	3932
Glu Leu Thr	Ala Val Gln Asp Glu	Asn Phe Asn Ala Asn	His Ala	
1285	1290	1295		
ctc agt ggt	ctg gag aga gac ggg	ctt gcg ctt aat ctc	acc ctg	3977
Leu Ser Gly	Leu Glu Arg Asp Gly	Leu Ala Leu Asn Leu	Thr Leu	
1300	1305	1310		
agg cag ctg	gat cag cat ctg gag	atc ctc aaa cat tca	aat ttc	4022
Arg Gln Leu	Asp Gln His Leu Glu	Ile Leu Lys His Ser	Asn Phe	
1315	1320	1325		
tta ggt gcc	tat gac agc atc cga	cat gcc cac agc cag	tcc aca	4067
Leu Gly Ala	Tyr Asp Ser Ile Arg	His Ala His Ser Gln	Ser Thr	
1330	1335	1340		
gag gca gag	cgc cgt gcc aac gcc	tcc acc ttt gca gta	ccc agc	4112
Glu Ala Glu	Arg Arg Ala Asn Ala	Ser Thr Phe Ala Val	Pro Ser	
1345	1350	1355		
cct gtg agc	aac tca gca gat acc	cgg cgt cgg acg gaa	gtg cta	4157
Pro Val Ser	Asn Ser Ala Asp Thr	Arg Arg Arg Thr Glu	Val Leu	
1360	1365	1370		
atg ggt gcc	caa aaa gaa aac ttc	aac cgc caa cat ttg	gcc aac	4202
Met Gly Ala	Gln Lys Glu Asn Phe	Asn Arg Gln His Leu	Ala Asn	
1375	1380	1385		
cag cag gca	ctg gga cgg ctc tct	gca cat gcc cac acc	ctg agc	4247

Gln Gln Ala	Leu Gly Arg	Leu Ser	Ala His Ala	His Thr	Leu Ser	
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Leu Thr Gly	Ile Asn Glu	Leu Val	Cys Gly Ala	Pro Gly	Asp Ala	
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ccc tgt gcc	acc agc cct	tgt ggg	ggg gcc gga	tgt cgg	gat gaa	4337
Pro Cys Ala	Thr Ser Pro	Cys Gly	Gly Ala Gly	Cys Arg	Asp Glu	
1420		1425		1430		
gat ggg cag	ccc cgt tgt	ggg ggc	ctc ggt tgc	agt ggg	gca gca	4382
Asp Gly Gln	Pro Arg Cys	Gly Gly	Leu Gly Cys	Ser Gly	Ala Ala	
1435		1440		1445		
gcc acg gca	gat cta gcg	ctg ggc	cgg gct cgg	cac acg	cag gca	4427
Ala Thr Ala	Asp Leu Ala	Leu Gly	Arg Ala Arg	His Thr	Gln Ala	
1450		1455		1460		
gag ctg cag	cgg gca ctg	gta gaa	ggg ggc ggc	atc ctc	agc cgg	4472
Glu Leu Gln	Arg Ala Leu	Val Glu	Gly Gly Gly	Ile Leu	Ser Arg	
1465		1470		1475		
gtg tct gag	act cgt cgg	cag gca	gaa gag gca	cag cag	cga gca	4517
Val Ser Glu	Thr Arg Arg	Gln Ala	Glu Glu Ala	Gln Gln	Arg Ala	
1480		1485		1490		
cag gca gcc	ctg gac aag	gct aat	gct tcc agg	ggc cag	gtg gaa	4562
Gln Ala Ala	Leu Asp Lys	Ala Asn	Ala Ser Arg	Gly Gln	Val Glu	
1495		1500		1505		
cag gcc aat	cag gag ctt	cga gaa	ctt atc cag	aat gtg	aaa gac	4607
Gln Ala Asn	Gln Glu Leu	Arg Glu	Leu Ile Gln	Asn Val	Lys Asp	
1510		1515		1520		

ttc ctc agc	cag gag gga gcc gat	cct gac agt att gaa atg gta	4652
Phe Leu Ser	Gln Glu Gly Ala Asp	Pro Asp Ser Ile Glu Met Val	
1525	1530	1535	
gcg act cgg	gtg cta gac atc tcc	atc ccg gcc tca ccc gag cag	4697
Ala Thr Arg	Val Leu Asp Ile Ser	Ile Pro Ala Ser Pro Glu Gln	
1540	1545	1550	
atc cag cgc	cta gcc agt gag att	gca gaa cgc gtc cga agc ctg	4742
Ile Gln Arg	Leu Ala Ser Glu Ile	Ala Glu Arg Val Arg Ser Leu	
1555	1560	1565	
gcc gac gtg	gac aca atc ctg gcc	cat acc atg ggc gac gtg cgt	4787
Ala Asp Val	Asp Thr Ile Leu Ala	His Thr Met Gly Asp Val Arg	
1570	1575	1580	
cgg gct gaa	cag cta ctg caa gat	gcg cac cgg gca cgg agc cgg	4832
Arg Ala Glu	Gln Leu Leu Gln Asp	Ala His Arg Ala Arg Ser Arg	
1585	1590	1595	
gcc gag ggt	gag aga cag aag gca	gag aca gtc caa gcg gca ctg	4877
Ala Glu Gly	Glu Arg Gln Lys Ala	Glu Thr Val Gln Ala Ala Leu	
1600	1605	1610	
gag gag gct	cag agg gca caa gga	gct gct cag ggt gcc atc tgg	4922
Glu Glu Ala	Gln Arg Ala Gln Gly	Ala Ala Gln Gly Ala Ile Trp	
1615	1620	1625	
gga gca gtg	gtt gac aca caa aac	aca gag cag acc ctg cag cgg	4967
Gly Ala Val	Val Asp Thr Gln Asn	Thr Glu Gln Thr Leu Gln Arg	
1630	1635	1640	
gtc cag gag	agg atg gca ggt gca	gag aag tct ctg aac tct gcc	5012

Val Gln Glu	Arg Met Ala Gly Ala	Glu Lys Ser Leu Asn	Ser Ala	
1645	1650	1655		
ggt gag cgg	gct cgg caa tta gac	gcc ctc ctg gag gcc	ctg aaa	5057
Gly Glu Arg	Ala Arg Gln Leu Asp	Ala Leu Leu Glu Ala	Leu Lys	
1660	1665	1670		
ctg aaa cgg	gca gga aat agc ctg	gca gca tct aca gcg	gaa gaa	5102
Leu Lys Arg	Ala Gly Asn Ser Leu	Ala Ala Ser Thr Ala	Glu Glu	
1675	1680	1685		
aca gca ggc	agt gcc cag agc cgt	gcc agg gag gct gag	aaa caa	5147
Thr Ala Gly	Ser Ala Gln Ser Arg	Ala Arg Glu Ala Glu	Lys Gln	
1690	1695	1700		
cta cgg gaa	caa gta ggt gac caa	tac caa aca gtg agg	gcg ttg	5192
Leu Arg Glu	Gln Val Gly Asp Gln	Tyr Gln Thr Val Arg	Ala Leu	
1705	1710	1715		
gca gag cgg	aag gct gaa ggt gtt	ctg gct gca caa gcc	agg gca	5237
Ala Glu Arg	Lys Ala Glu Gly Val	Leu Ala Ala Gln Ala	Arg Ala	
1720	1725	1730		
gaa caa ctg	cgg gat gag gct cgg	gac ctg ttg cag gcc	gct cag	5282
Glu Gln Leu	Arg Asp Glu Ala Arg	Asp Leu Leu Gln Ala	Ala Gln	
1735	1740	1745		
gat aag ctg	cag cgg cta cag gag	ctg gag ggc aca tat	gag gag	5327
Asp Lys Leu	Gln Arg Leu Gln Glu	Leu Glu Gly Thr Tyr	Glu Glu	
1750	1755	1760		
aac gag cgt	gca ctg gag ggc aaa	gcg gcc cag ctg gat	ggg ctg	5372
Asn Glu Arg	Ala Leu Glu Gly Lys	Ala Ala Gln Leu Asp	Gly Leu	
1765	1770	1775		

gaa gcc agg atg cgc agt gtg etc cag gcc atc aac ttg cag gtc 5417

Glu Ala Arg Met Arg Ser Val Leu Gln Ala Ile Asn Leu Gln Val

1780

1785

1790

cag atc tac aac acc tgc cag tga ccactcccta gggcctagcc ttgtcgccaa 5471

Gln Ile Tyr Asn Thr Cys Gln

1795

gcactgttct gcacacgata gtccgcacat taaagagctc ctggctagca agagctttca 5531

ataaacctgt gtgaacctca aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aa 5583

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<211> 1799

<212> PRT

<213> Mus musculus

<400> 8

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1

5

10

15

Leu Pro Trp Glu Leu Arg Leu Gly Leu Leu Leu Ser Val Leu Ala Ala

20

25

30

Thr Leu Ala Gln Ala Pro Ser Leu Asp Val Pro Gly Cys Ser Arg Gly

35

40

45

Ser Cys Tyr Pro Ala Thr Gly Asp Leu Leu Val Gly Arg Ala Asp Arg

50

55

60

Leu Thr Ala Ser Ser Thr Cys Gly Leu His Ser Pro Gln Pro Tyr Cys
 65 70 75 80

Ile Val Ser His Leu Gln Asp Glu Lys Lys Cys Phe Leu Cys Asp Ser
 85 90 95

Arg Arg Pro Phe Ser Ala Arg Asp Asn Pro Asn Ser His Arg Ile Gln
 100 105 110

Asn Val Val Thr Ser Phe Ala Pro Gln Arg Arg Thr Ala Trp Trp Gln
 115 120 125

Ser Glu Asn Gly Val Pro Met Val Thr Ile Gln Leu Asp Leu Glu Ala
 130 135 140

Glu Phe His Phe Thr His Leu Ile Met Thr Phe Lys Thr Phe Arg Pro
 145 150 155 160

Ala Ala Met Leu Val Glu Arg Ser Ala Asp Phe Gly Arg Thr Trp His
 165 170 175

Val Tyr Arg Tyr Phe Ser Tyr Asp Cys Gly Ala Asp Phe Pro Gly Ile
 180 185 190

Pro Leu Ala Pro Pro Arg Arg Trp Asp Asp Val Val Cys Glu Ser Arg
 195 200 205

Tyr Ser Glu Ile Glu Pro Ser Thr Glu Gly Glu Val Ile Tyr Arg Val
 210 215 220

Leu Asp Pro Ala Ile Pro Ile Pro Asp Pro Tyr Ser Ser Arg Ile Gln
 225 230 235 240

Asn Leu Leu Lys Ile Thr Asn Leu Arg Val Asn Leu Thr Arg Leu His
 245 250 255

Thr Leu Gly Asp Asn Leu Leu Asp Pro Arg Arg Glu Ile Arg Glu Lys
 260 265 270

Tyr Tyr Tyr Ala Leu Tyr Glu Leu Val Ile Arg Gly Asn Cys Phe Cys
 275 280 285

Tyr Gly His Ala Ser Gln Cys Ala Pro Ala Pro Gly Ala Pro Ala His
 290 295 300

Ala Glu Gly Met Val His Gly Ala Cys Ile Cys Lys His Asn Thr Arg
 305 310 315 320

Gly Leu Asn Cys Glu Gln Cys Gln Asp Phe Tyr Gln Asp Leu Pro Trp

325

330

335

His Pro Ala Glu Asp Gly His Thr His Ala Cys Arg Lys Cys Glu Cys

340

345

350

Asn Gly His Thr His Ser Cys His Phe Asp Met Ala Val Tyr Leu Ala

355

360

365

Ser Gly Asn Val Ser Gly Gly Val Cys Asp Gly Cys Gln His Asn Thr

370

375

380

Ala Gly Arg His Cys Glu Phe Cys Arg Pro Phe Phe Tyr Arg Asp Pro

385

390

395

400

Thr Lys Asp Met Arg Asp Pro Ala Val Cys Arg Pro Cys Asp Cys Asp

405

410

415

Pro Met Gly Ser Gln Asp Gly Gly Arg Cys Asp Ser His Asp Asp Pro

420

425

430

Val Leu Gly Leu Val Ser Gly Gln Cys Arg Cys Lys Glu His Val Val

435

440

445

Gly Thr Arg Cys Gln Gln Cys Arg Asp Gly Phe Phe Gly Leu Ser Ala

450

455

460

Ser Asp Pro Arg Gly Cys Gln Arg Cys Gln Cys Asn Ser Arg Gly Thr
 465 470 475 480

Val Pro Gly Ser Ser Pro Cys Asp Ser Ser Ser Gly Thr Cys Phe Cys
 485 490 495

Lys Arg Leu Val Thr Gly His Gly Cys Asp Arg Cys Leu Pro Gly His
 500 505 510

Trp Gly Leu Ser His Asp Leu Leu Gly Cys Arg Pro Cys Asp Cys Asp
 515 520 525

Val Gly Gly Ala Leu Asp Pro Gln Cys Asp Glu Ala Thr Gly Gln Cys
 530 535 540

Arg Cys Arg Gln His Met Ile Gly Arg Arg Cys Glu Gln Val Gln Pro
 545 550 555 560

Gly Tyr Phe Arg Pro Phe Leu Asp His Leu Thr Trp Glu Ala Glu Ala
 565 570 575

Ala Gln Gly Gln Gly Leu Glu Val Val Glu Arg Leu Val Thr Asn Arg
 580 585 590

Glu Thr Pro Ser Trp Thr Gly Pro Gly Phe Val Arg Leu Arg Glu Gly

595

600

605

Gln Glu Val Glu Phe Leu Val Thr Ser Leu Pro Arg Ala Met Asp Tyr

610

615

620

Asp Leu Leu Leu Arg Trp Glu Pro Gln Val Pro Glu Gln Trp Ala Glu

625

630

635

640

Leu Glu Leu Met Val Gln Arg Pro Gly Pro Val Ser Ala His Ser Pro

645

650

655

Cys Gly His Val Leu Pro Lys Asp Asp Arg Ile Gln Gly Met Leu His

660

665

670

Pro Asn Thr Arg Phe Leu Val Phe Pro Arg Pro Val Cys Leu Glu Pro

675

680

685

Gly Ile Ser Tyr Lys Leu Lys Leu Lys Leu Ile Gly Thr Gly Gly Arg

690

695

700

Ala Gln Pro Glu Thr Ser Tyr Ser Gly Leu Leu Ile Asp Ser Leu Val

705

710

715

720

Leu Gln Pro His Val Leu Val Leu Glu Met Phe Ser Gly Gly Asp Ala

725

730

735

Ala Ala Leu Glu Arg Arg Thr Thr Phe Glu Arg Tyr Arg Cys His Glu
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Glu Gly Leu Met Pro Ser Lys Ala Pro Leu Ser Glu Thr Cys Ala Pro
 755 760 765

Leu Leu Ile Ser Val Ser Ala Leu Ile Tyr Asn Gly Ala Leu Pro Cys
 770 775 780

Gln Cys Asp Pro Gln Gly Ser Leu Ser Ser Glu Cys Ser Pro His Gly
 785 790 795 800

Gly Gln Cys Arg Cys Lys Pro Gly Val Val Gly Arg Arg Cys Asp Val
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Cys Ala Thr Gly Tyr Tyr Gly Phe Gly Pro Ala Gly Cys Gln Ala Cys
 820 825 830

Gln Cys Ser Pro Asp Gly Ala Leu Ser Ala Leu Cys Glu Gly Thr Ser
 835 840 845

Gly Gln Cys Pro Cys Arg Pro Gly Ala Phe Gly Leu Arg Cys Asp His
 850 855 860

Cys Gln Arg Gly Gln Trp Gly Phe Pro Asn Cys Arg Pro Cys Val Cys

865

870

875

880

Asn Gly Arg Ala Asp Glu Cys Asp Thr His Thr Gly Ala Cys Leu Gly

885

890

895

Cys Arg Asp Tyr Thr Gly Gly Glu His Cys Glu Arg Cys Ile Ala Gly

900

905

910

Phe His Gly Asp Pro Arg Leu Pro Tyr Gly Gly Gln Cys Arg Pro Cys

915

920

925

Pro Cys Pro Glu Gly Pro Gly Ser Gln Arg His Phe Ala Thr Ser Cys

930

935

940

His Arg Asp Gly Tyr Ser Gln Gln Ile Val Cys Gln Cys Arg Glu Gly

945

950

955

960

Tyr Thr Gly Leu Arg Cys Glu Ala Cys Ala Pro Gly His Phe Gly Asp

965

970

975

Pro Ser Lys Pro Gly Gly Arg Cys Gln Leu Cys Glu Cys Ser Gly Asn

980

985

990

Ile Asp Pro Met Asp Pro Asp Ala Cys Asp Pro His Thr Gly Gln Cys

995

1000

1005

Leu Arg Cys Leu His Asn Thr Glu Gly Pro His Cys Gly Tyr Cys
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Lys Pro Gly Phe His Gly Gln Ala Ala Arg Gln Ser Cys His Arg
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Cys Thr Cys Asn Leu Leu Gly Thr Asp Pro Arg Arg Cys Pro Ser
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Thr Asp Leu Cys His Cys Asp Pro Ser Thr Gly Gln Cys Pro Cys
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Leu Pro His Val Gln Gly Leu Asn Cys Asp His Cys Ala Pro Asn
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Phe Trp Asn Phe Thr Ser Gly Arg Gly Cys Gln Pro Cys Ala Cys
 1085 1090 1095

His Pro Ser Arg Ala Arg Gly Pro Thr Cys Asn Glu Phe Thr Gly
 1100 1105 1110

Gln Cys His Cys His Ala Gly Phe Gly Gly Arg Thr Cys Ser Glu
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Cys Gln Glu Leu Tyr Trp Gly Asp Pro Gly Leu Gln Cys Arg Ala

1130 1135 1140

Cys Asp Cys Asp Pro Arg Gly Ile Asp Lys Pro Gln Cys His Arg
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Ser Thr Gly His Cys Ser Cys Arg Pro Gly Val Ser Gly Val Arg
1160 1165 1170

Cys Asp Gln Cys Ala Arg Gly Phe Ser Gly Val Phe Pro Ala Cys
1175 1180 1185

His Pro Cys His Ala Cys Phe Gly Asp Trp Asp Arg Val Val Gln
1190 1195 1200

Asp Leu Ala Ala Arg Thr Arg Arg Leu Glu Gln Trp Ala Gln Glu
1205 1210 1215

Leu Gln Gln Thr Gly Val Leu Gly Ala Phe Glu Ser Ser Phe Leu
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Asn Met Gln Gly Lys Leu Gly Met Val Gln Ala Ile Met Ser Ala
1235 1240 1245

Arg Asn Ala Ser Ala Ala Ser Thr Ala Lys Leu Val Glu Ala Thr
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Glu Gly	Leu Arg His	Glu Ile	Gly Lys Thr Thr	Glu	Arg Leu Thr
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Gln Leu	Glu Ala Glu	Leu Thr	Ala Val Gln Asp	Glu	Asn Phe Asn
1280		1285		1290	

Ala Asn	His Ala Leu	Ser Gly	Leu Glu Arg Asp	Gly	Leu Ala Leu
1295		1300		1305	

Asn Leu	Thr Leu Arg	Gln Leu	Asp Gln His	Leu Glu	Ile Leu Lys
1310		1315		1320	

His Ser	Asn Phe Leu	Gly Ala	Tyr Asp Ser	Ile Arg	His Ala His
1325		1330		1335	

Ser Gln	Ser Thr Glu	Ala Glu	Arg Arg Ala	Asn Ala	Ser Thr Phe
1340		1345		1350	

Ala Val	Pro Ser Pro	Val Ser	Asn Ser Ala	Asp Thr	Arg Arg Arg
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Thr Glu	Val Leu Met	Gly Ala	Gln Lys Glu	Asn Phe	Asn Arg Gln
1370		1375		1380	

His Leu	Ala Asn Gln	Gln Ala	Leu Gly Arg	Leu Ser	Ala His Ala
---------	-------------	---------	-------------	---------	-------------

1385		1390		1395
His Thr	Leu Ser Leu Thr Gly	Ile Asn Glu Leu Val	Cys Gly Ala	
1400	1405	1410		
Pro Gly	Asp Ala Pro Cys Ala	Thr Ser Pro Cys Gly	Gly Ala Gly	
1415	1420	1425		
Cys Arg	Asp Glu Asp Gly Gln	Pro Arg Cys Gly Gly	Leu Gly Cys	
1430	1435	1440		
Ser Gly	Ala Ala Ala Thr Ala	Asp Leu Ala Leu Gly	Arg Ala Arg	
1445	1450	1455		
His Thr	Gln Ala Glu Leu Gln	Arg Ala Leu Val Glu	Gly Gly Gly	
1460	1465	1470		
Ile Leu	Ser Arg Val Ser Glu	Thr Arg Arg Gln Ala	Glu Glu Ala	
1475	1480	1485		
Gln Gln	Arg Ala Gln Ala Ala	Leu Asp Lys Ala Asn	Ala Ser Arg	
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Gly Gln	Val Glu Gln Ala Asn	Gln Glu Leu Arg Glu	Leu Ile Gln	
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Asn Val Lys Asp Phe Leu Ser Gln Glu Gly Ala Asp Pro Asp Ser

1520

1525

1530

Ile Glu Met Val Ala Thr Arg Val Leu Asp Ile Ser Ile Pro Ala

1535

1540

1545

Ser Pro Glu Gln Ile Gln Arg Leu Ala Ser Glu Ile Ala Glu Arg

1550

1555

1560

Val Arg Ser Leu Ala Asp Val Asp Thr Ile Leu Ala His Thr Met

1565

1570

1575

Gly Asp Val Arg Arg Ala Glu Gln Leu Leu Gln Asp Ala His Arg

1580

1585

1590

Ala Arg Ser Arg Ala Glu Gly Glu Arg Gln Lys Ala Glu Thr Val

1595

1600

1605

Gln Ala Ala Leu Glu Glu Ala Gln Arg Ala Gln Gly Ala Ala Gln

1610

1615

1620

Gly Ala Ile Trp Gly Ala Val Val Asp Thr Gln Asn Thr Glu Gln

1625

1630

1635

Thr Leu Gln Arg Val Gln Glu Arg Met Ala Gly Ala Glu Lys Ser
 1640 1645 1650

Leu Asn Ser Ala Gly Glu Arg Ala Arg Gln Leu Asp Ala Leu Leu
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Glu Ala Leu Lys Leu Lys Arg Ala Gly Asn Ser Leu Ala Ala Ser
 1670 1675 1680

Thr Ala Glu Glu Thr Ala Gly Ser Ala Gln Ser Arg Ala Arg Glu
 1685 1690 1695

Ala Glu Lys Gln Leu Arg Glu Gln Val Gly Asp Gln Tyr Gln Thr
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Val Arg Ala Leu Ala Glu Arg Lys Ala Glu Gly Val Leu Ala Ala
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Gln Ala Arg Ala Glu Gln Leu Arg Asp Glu Ala Arg Asp Leu Leu
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Gln Ala Ala Gln Asp Lys Leu Gln Arg Leu Gln Glu Leu Glu Gly
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Thr Tyr Glu Glu Asn Glu Arg Ala Leu Glu Gly Lys Ala Ala Gln
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Asn Leu Gln Val Gln Ile Tyr Asn Thr Cys Gln
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gcg ctg gtg att cag gag aca cac ttc gcg gca ggc gcg gac atg ggc 96

Ala Leu Val Ile Gln Glu Thr His Phe Ala Ala Gly Ala Asp Met Gly

20 25 30

tct tgc tac gac ggt gtg gga cgc gca cag cgc tgt ctg cct gag ttc 144

Ser Cys Tyr Asp Gly Val Gly Arg Ala Gln Arg Cys Leu Pro Glu Phe

35 40 45

gag aac gcg gcg ttc ggc cga cgc gcc gag gcc tcc cac acg tgc gga	192
Glu Asn Ala Ala Phe Gly Arg Arg Ala Glu Ala Ser His Thr Cys Gly	
50 55 60	
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Arg Pro Pro Glu Asp Phe Cys Pro His Val Gly Ala Pro Gly Ala Gly	
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cta cag tgc cag cgc tgc gac gat gct gac ccc gga cga cgc cac gac	288
Leu Gln Cys Gln Arg Cys Asp Asp Ala Asp Pro Gly Arg Arg His Asp	
85 90 95	
gcc tcc tac ctc aca gac ttc cac agc ccc gat gac agc acc tgg tgg	336
Ala Ser Tyr Leu Thr Asp Phe His Ser Pro Asp Asp Ser Thr Trp Trp	
100 105 110	
cag agc cca tcc atg gcc ttc ggg gtg cag tac ccc acc tcg gtt aac	384
Gln Ser Pro Ser Met Ala Phe Gly Val Gln Tyr Pro Thr Ser Val Asn	
115 120 125	
ctg acc ttg agc tta ggg aag gcc tat gag att acc tat gtg agg ctg	432
Leu Thr Leu Ser Leu Gly Lys Ala Tyr Glu Ile Thr Tyr Val Arg Leu	
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aag ttc cac acc agt cgc cct gag agt ttt gcc atc tac aag cgc acg	480
Lys Phe His Thr Ser Arg Pro Glu Ser Phe Ala Ile Tyr Lys Arg Thr	
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tac gcc agt ggc ccc tgg gag ccc tac caa tac tac agt gcc tcc tgc	528
Tyr Ala Ser Gly Pro Trp Glu Pro Tyr Gln Tyr Tyr Ser Ala Ser Cys	
165 170 175	
cag aaa acc tat ggc cgt cct gag ggc cac tac ctg cga ccg ggc gag	576
Gln Lys Thr Tyr Gly Arg Pro Glu Gly His Tyr Leu Arg Pro Gly Glu	

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Asp Glu Arg Val Ala Phe Cys Thr Ser Glu Phe Ser Asp Ile Ser Pro			
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Leu Asn Gly Gly Asn Val Ala Phe Ser Thr Leu Glu Gly Arg Pro Ser			
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gcc tac aac ttt gag gag agc cct gtg ctg cag gag tgg gtc acc agc			720
Ala Tyr Asn Phe Glu Glu Ser Pro Val Leu Gln Glu Trp Val Thr Ser			
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act gac atc ctg atc tct cta gat cgg ctc aac acg ttt ggg gat gac			768
Thr Asp Ile Leu Ile Ser Leu Asp Arg Leu Asn Thr Phe Gly Asp Asp			
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atc ttc aag gac ccc aga gtg ctc cag tct tac tac tac gct gtg tct			816
Ile Phe Lys Asp Pro Arg Val Leu Gln Ser Tyr Tyr Tyr Ala Val Ser			
260	265	270	
gac ttc tct gtg ggt ggc agg tgc aaa tgc aat ggt cac gcc agt gaa			864
Asp Phe Ser Val Gly Gly Arg Cys Lys Cys Asn Gly His Ala Ser Glu			
275	280	285	
tgc gaa ccc aat gcg gct ggt cag ctg gct tgc cgc tgt cag cac aac			912
Cys Glu Pro Asn Ala Ala Gly Gln Leu Ala Cys Arg Cys Gln His Asn			
290	295	300	
acc aca gga gtg gac tgc gag cgt tgt ctg ccc ttc ttc cag gac cgt			960
Thr Thr Gly Val Asp Cys Glu Arg Cys Leu Pro Phe Phe Gln Asp Arg			
305	310	315	320

ccg tgg gcc cga ggc acc gcc gag gat gcc aac gag tgt ctg ccc tgc	1008
Pro Trp Ala Arg Gly Thr Ala Glu Asp Ala Asn Glu Cys Leu Pro Cys	
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Asn Cys Ser Gly His Ser Glu Glu Cys Thr Phe Asp Arg Glu Leu Tyr	
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cgg agc aca ggc cat ggt ggg cac tgt cag cgg tgc cgt gac cac aca	1104
Arg Ser Thr Gly His Gly Gly His Cys Gln Arg Cys Arg Asp His Thr	
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Thr Gly Pro His Cys Glu Arg Cys Glu Lys Asn Tyr Tyr Arg Trp Ser	
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Pro Lys Thr Pro Cys Gln Pro Cys Asp Cys His Pro Ala Gly Ser Leu	
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Ser Leu Gln Cys Asp Asn Ser Gly Val Cys Pro Cys Lys Pro Thr Val	
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Thr Gly Trp Lys Cys Asp Arg Cys Leu Pro Gly Phe His Ser Leu Ser	
420 425 430	
gag ggc ggc tgc aga ccc tgt gcc tgc aat gtc gcc ggc agc ttg ggc	1344
Glu Gly Gly Cys Arg Pro Cys Ala Cys Asn Val Ala Gly Ser Leu Gly	
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acc tgt gac ccc cgc agt ggg aac tgt ccc tgc aaa gag aat gta gaa	1392
Thr Cys Asp Pro Arg Ser Gly Asn Cys Pro Cys Lys Glu Asn Val Glu	

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cac aat cca gtg ggc tgc agc agc tgc ttc tgt tat ggccactcca			1486
His Asn Pro Val Gly Cys Ser Ser Cys Phe Cys Tyr			
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<212> PRT

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Ser Cys Tyr Asp Gly Val Gly Arg Ala Gln Arg Cys Leu Pro Glu Phe

35 40 45

Glu Asn Ala Ala Phe Gly Arg Arg Ala Glu Ala Ser His Thr Cys Gly

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Arg Pro Pro Glu Asp Phe Cys Pro His Val Gly Ala Pro Gly Ala Gly

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Leu Gln Cys Gln Arg Cys Asp Asp Ala Asp Pro Gly Arg Arg His Asp

85 90 95

Ala Ser Tyr Leu Thr Asp Phe His Ser Pro Asp Asp Ser Thr Trp Trp

100 105 110

Gln Ser Pro Ser Met Ala Phe Gly Val Gln Tyr Pro Thr Ser Val Asn
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Leu Thr Leu Ser Leu Gly Lys Ala Tyr Glu Ile Thr Tyr Val Arg Leu
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Lys Phe His Thr Ser Arg Pro Glu Ser Phe Ala Ile Tyr Lys Arg Thr
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Tyr Ala Ser Gly Pro Trp Glu Pro Tyr Gln Tyr Tyr Ser Ala Ser Cys
 165 170 175

Gln Lys Thr Tyr Gly Arg Pro Glu Gly His Tyr Leu Arg Pro Gly Glu
 180 185 190

Asp Glu Arg Val Ala Phe Cys Thr Ser Glu Phe Ser Asp Ile Ser Pro
 195 200 205

Leu Asn Gly Gly Asn Val Ala Phe Ser Thr Leu Glu Gly Arg Pro Ser
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Ala Tyr Asn Phe Glu Glu Ser Pro Val Leu Gln Glu Trp Val Thr Ser
 225 230 235 240

Thr Asp Ile Leu Ile Ser Leu Asp Arg Leu Asn Thr Phe Gly Asp Asp

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255

Ile Phe Lys Asp Pro Arg Val Leu Gln Ser Tyr Tyr Tyr Ala Val Ser
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Asp Phe Ser Val Gly Gly Arg Cys Lys Cys Asn Gly His Ala Ser Glu
 275 280 285

Cys Glu Pro Asn Ala Ala Gly Gln Leu Ala Cys Arg Cys Gln His Asn
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Thr Thr Gly Val Asp Cys Glu Arg Cys Leu Pro Phe Phe Gln Asp Arg
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Pro Trp Ala Arg Gly Thr Ala Glu Asp Ala Asn Glu Cys Leu Pro Cys
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Asn Cys Ser Gly His Ser Glu Glu Cys Thr Phe Asp Arg Glu Leu Tyr
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Arg Ser Thr Gly His Gly Gly His Cys Gln Arg Cys Arg Asp His Thr
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Thr Gly Pro His Cys Glu Arg Cys Glu Lys Asn Tyr Tyr Arg Trp Ser
 370 375 380

Pro Lys Thr Pro Cys Gln Pro Cys Asp Cys His Pro Ala Gly Ser Leu
 385 390 395 400

Ser Leu Gln Cys Asp Asn Ser Gly Val Cys Pro Cys Lys Pro Thr Val
 405 410 415

Thr Gly Trp Lys Cys Asp Arg Cys Leu Pro Gly Phe His Ser Leu Ser
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Glu Gly Gly Cys Arg Pro Cys Ala Cys Asn Val Ala Gly Ser Leu Gly
 435 440 445

Thr Cys Asp Pro Arg Ser Gly Asn Cys Pro Cys Lys Glu Asn Val Glu
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His Asn Pro Val Gly Cys Ser Ser Cys Phe Cys Tyr
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Gln Trp Glu Arg Thr Tyr Leu Gly Ser Ala Leu Val Cys Thr Cys Tyr

35 40 45

Gly Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Pro Glu Glu

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Thr Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp Thr

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Tyr Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile Gly

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Ala Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His Glu

100 105 110

Gly Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His Glu

115 120 125

Thr Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys Gly
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Glu Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp Gln Ala Ala
 145 150 155 160

Gly Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln Gly
 165 170 175

Trp Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg Ile
 180 185 190

Thr Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr Ser
 195 200 205

Tyr Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn Leu
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Leu Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys Glu
 225 230 235 240

Arg His Thr Ser Leu Gln Thr Thr Ser Ala Gly Ser Gly Ser Phe Thr
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Asp Val Arg Thr Ala Ile Tyr Gln Pro Gln Pro His Pro Gln Pro Pro

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265

270

Pro Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val Gly
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Met Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr Cys
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Leu Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr Tyr
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Gly Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr Asn
 325 330 335

Gly Lys Thr Phe Tyr Ser Cys Thr Thr Glu Gly Arg Gln Asp Gly His
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Leu Trp Cys Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr Ser
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Phe Cys Thr Asp His Thr Val Leu Val Gln Thr Arg Gly Gly Asn Ser
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Asn Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn Tyr
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Thr Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys Gly
 405 410 415

Thr Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro Met
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Ala Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr Arg
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Ile Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met Arg
 450 455 460

Cys Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Val Ala Tyr
 465 470 475 480

Ser Gln Leu Arg Asp Gln Cys Ile Val Asp Gly Ile Thr Tyr Asn Val
 485 490 495

Asn Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn Cys
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Thr Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val Asp
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Gln Cys Gln Asp Ser Glu Thr Arg Thr Phe Tyr Gln Ile Gly Asp Ser

530

535

540

Trp Glu Lys Tyr Leu Gln Gly Val Arg Tyr Gln Cys Tyr Cys Tyr Gly
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Arg Gly Ile Gly Glu Trp Ala Cys Gln Pro Leu Gln Thr Tyr Pro Asp
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Thr Ser Gly Pro Val Gln Val Ile Ile Thr Glu Thr Pro Ser Gln Pro
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Asn Ser His Pro Ile Gln Trp Ser Ala Pro Glu Ser Ser His Ile Ser
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Lys Tyr Ile Leu Arg Trp Lys Pro Lys Asn Ser Pro Asp Arg Trp Lys
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Glu Ala Thr Ile Pro Gly His Leu Asn Ser Tyr Thr Ile Lys Gly Leu
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Arg Pro Gly Val Val Tyr Glu Gly Gln Leu Ile Ser Val Gln His Tyr
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Gly Gln Arg Glu Val Thr Arg Phe Asp Phe Thr Thr Thr Ser Thr Ser
 660 665 670

Pro Ala Val Thr Ser Asn Thr Val Thr Gly Glu Thr Thr Pro Leu Ser
 675 680 685

Pro Val Val Ala Thr Ser Glu Ser Val Thr Glu Ile Thr Ala Ser Ser
 690 695 700

Phe Val Val Ser Trp Val Ser Ala Ser Asp Thr Val Ser Gly Phe Arg
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Val Glu Tyr Glu Leu Ser Glu Glu Gly Asp Glu Pro Gln Tyr Leu Asp
 725 730 735

Leu Pro Ser Thr Ala Thr Ser Val Asn Ile Pro Asp Leu Leu Pro Gly
 740 745 750

Arg Lys Tyr Thr Val Asn Val Tyr Glu Ile Ser Glu Glu Gly Glu Gln
 755 760 765

Asn Leu Ile Leu Ser Thr Ser Gln Thr Thr Ala Pro Asp Ala Pro Pro
 770 775 780

Asp Pro Thr Val Asp Gln Val Asp Asp Thr Ser Ile Val Val Arg Trp
 785 790 795 800

Ser Arg Pro Arg Ala Pro Ile Thr Gly Tyr Arg Ile Val Tyr Ser Pro
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Ser Val Glu Gly Ser Ser Thr Glu Leu Asn Leu Pro Glu Thr Ala Asn
 820 825 830

Ser Val Thr Leu Ser Asp Leu Gln Pro Gly Val Gln Tyr Asn Ile Thr
 835 840 845

Ile Tyr Ala Val Glu Glu Asn Gln Glu Ser Thr Pro Val Phe Ile Gln
 850 855 860

Gln Glu Thr Thr Gly Val Pro Arg Ser Asp Lys Val Pro Pro Pro Arg
 865 870 875 880

Asp Leu Gln Phe Val Glu Val Thr Asp Val Lys Ile Thr Ile Met Trp
 885 890 895

Thr Pro Pro Glu Ser Pro Val Thr Gly Tyr Arg Val Asp Val Ile Pro
 900 905 910

Val Asn Leu Pro Gly Glu His Gly Gln Arg Leu Pro Val Ser Arg Asn
 915 920 925

Thr Phe Ala Glu Val Thr Gly Leu Ser Pro Gly Val Thr Tyr His Phe
 930 935 940

Lys Val Phe Ala Val Asn Gln Gly Arg Glu Ser Lys Pro Leu Thr Ala
 945 950 955 960

Gln Gln Ala Thr Lys Leu Asp Ala Pro Thr Asn Leu Gln Phe Ile Asn
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Glu Thr Asp Thr Thr Val Ile Val Thr Trp Thr Pro Pro Arg Ala Arg
 980 985 990

Ile Val Gly Tyr Arg Leu Thr Val Gly Leu Thr Arg Gly Gly Gln Pro
 995 1000 1005

Lys Gln Tyr Asn Val Gly Pro Ala Ala Ser Gln Tyr Pro Leu Arg
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Asn Leu Gln Pro Gly Ser Glu Tyr Ala Val Ser Leu Val Ala Val
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Lys Gly Asn Gln Gln Ser Pro Arg Val Thr Gly Val Phe Thr Thr
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Leu Gln Pro Leu Gly Ser Ile Pro His Tyr Asn Thr Glu Val Thr
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Glu Thr	Thr Ile Val	Ile Thr	Trp Thr	Pro Ala	Pro	Arg Ile Gly
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Phe Lys	Leu Gly Val	Arg Pro	Ser Gln Gly	Gly Glu	Ala Pro Arg
1085		1090		1095	

Glu Val	Thr Ser Glu	Ser Gly	Ser Ile Val	Val Ser	Gly Leu Thr
1100		1105		1110	

Pro Gly	Val Glu Tyr	Val Tyr	Thr Ile Ser	Val Leu	Arg Asp Gly
1115		1120		1125	

Gln Glu	Arg Asp Ala	Pro Ile	Val Lys Lys	Val Val	Thr Pro Leu
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Ser Pro	Pro Thr Asn	Leu His	Leu Glu Ala	Asn Pro	Asp Thr Gly
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Val Leu	Thr Val Ser	Trp Glu	Arg Ser Thr	Thr Pro	Asp Ile Thr
1160		1165		1170	

Gly Tyr	Arg Ile Thr	Thr Thr	Pro Thr Asn	Gly Gln	Gln Gly Tyr
1175		1180		1185	

Ser Leu	Glu Glu Val	Val His	Ala Asp Gln	Ser Ser	Cys Thr Phe
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Glu Asn Leu Ser Pro Gly Leu Glu Tyr Asn Val Ser Val Tyr Thr
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Val Lys Asp Asp Lys Glu Ser Val Pro Ile Ser Asp Thr Ile Ile
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Pro Ala Val Pro Pro Pro Thr Asp Leu Arg Phe Thr Asn Val Gly
 1235 1240 1245

Pro Asp Thr Met Arg Val Thr Trp Ala Pro Pro Ser Ser Ile Glu
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Leu Thr Asn Leu Leu Val Arg Tyr Ser Pro Val Lys Asn Glu Glu
 1265 1270 1275

Asp Val Ala Glu Leu Ser Ile Ser Pro Ser Asp Asn Ala Val Val
 1280 1285 1290

Leu Thr Asn Leu Leu Pro Gly Thr Glu Tyr Leu Val Ser Val Ser
 1295 1300 1305

Ser Val Tyr Glu Gln His Glu Ser Ile Pro Leu Arg Gly Arg Gln
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Lys Thr Ala Leu Asp Ser Pro Ser Gly Ile Asp Phe Ser Asp Ile
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Thr Ala Asn Ser Phe Thr Val His Trp Ile Ala Pro Arg Ala Thr
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Ile Thr Gly Tyr Arg Ile Arg His His Pro Glu Asn Met Gly Gly
 1355 1360 1365

Arg Pro Arg Glu Asp Arg Val Pro Pro Ser Arg Asn Ser Ile Thr
 1370 1375 1380

Leu Thr Asn Leu Asn Pro Gly Thr Glu Tyr Val Val Ser Ile Val
 1385 1390 1395

Ala Leu Asn Ser Lys Glu Glu Ser Leu Pro Leu Val Gly Gln Gln
 1400 1405 1410

Ser Thr Val Ser Asp Val Pro Arg Asp Leu Glu Val Ile Ala Ala
 1415 1420 1425

Thr Pro Thr Ser Leu Leu Ile Ser Trp Asp Ala Pro Ala Val Thr
 1430 1435 1440

Val Arg Tyr Tyr Arg Ile Thr Tyr Gly Glu Thr Gly Gly Ser Ser
 1445 1450 1455

Pro Val	Gln Glu Phe Thr Val	Pro Gly Ser Lys Ser	Thr Ala Thr
1460	1465	1470	

Ile Ser	Gly Leu Lys Pro Gly	Val Asp Tyr Thr Ile	Thr Val Tyr
1475	1480	1485	

Ala Val	Thr Gly Arg Gly Asp	Ser Pro Ala Ser Ser	Lys Pro Val
1490	1495	1500	

Ser Ile	Asn Tyr Arg Thr Glu	Ile Asp Lys Pro Ser	Gln Met Gln
1505	1510	1515	

Val Thr	Asp Val Gln Asp Asn	Ser Ile Ser Val Arg	Trp Leu Pro
1520	1525	1530	

Ser Ser	Ser Pro Val Thr Gly	Tyr Arg Val Thr Thr	Ala Pro Lys
1535	1540	1545	

Asn Gly	Pro Gly Pro Ser Lys	Thr Lys Thr Val Gly	Pro Asp Gln
1550	1555	1560	

Thr Glu	Met Thr Ile Glu Gly	Leu Gln Pro Thr Val	Glu Tyr Val
1565	1570	1575	

Val Ser Val Tyr Ala Gln Asn Gln Asn Gly Glu Ser Gln Pro Leu
 1580 1585 1590

Val Gln Thr Ala Val Thr Thr Ile Pro Ala Pro Thr Asn Leu Lys
 1595 1600 1605

Phe Thr Gln Val Thr Pro Thr Ser Leu Thr Ala Gln Trp Thr Ala
 1610 1615 1620

Pro Asn Val Gln Leu Thr Gly Tyr Arg Val Arg Val Thr Pro Lys
 1625 1630 1635

Glu Lys Thr Gly Pro Met Lys Glu Ile Asn Leu Ala Pro Asp Ser
 1640 1645 1650

Ser Ser Val Val Val Ser Gly Leu Met Val Ala Thr Lys Tyr Glu
 1655 1660 1665

Val Ser Val Tyr Ala Leu Lys Asp Thr Leu Thr Ser Arg Pro Ala
 1670 1675 1680

Gln Gly Val Val Thr Thr Leu Glu Asn Val Ser Pro Pro Arg Arg
 1685 1690 1695

Ala Arg Val Thr Asp Ala Thr Glu Thr Thr Ile Thr Ile Ser Trp
 1700 1705 1710

Arg Thr	Lys Thr	Glu Thr	Ile Thr	Gly Phe	Gln Val	Asp Ala	Ile
1715		1720		1725			

Pro Ala	Asn Gly	Gln Thr	Pro Ile	Gln Arg	Thr Ile	Arg Pro	Asp
1730		1735		1740			

Val Arg	Ser Tyr	Thr Ile	Thr Gly	Leu Gln	Pro Gly	Thr Asp	Tyr
1745		1750		1755			

Lys Ile	His Leu	Tyr Thr	Leu Asn	Asp Asn	Ala Arg	Ser Ser	Pro
1760		1765		1770			

Val Val	Ile Asp	Ala Ser	Thr Ala	Ile Asp	Ala Pro	Ser Asn	Leu
1775		1780		1785			

Arg Phe	Leu Ala	Thr Thr	Pro Asn	Ser Leu	Leu Val	Ser Trp	Gln
1790		1795		1800			

Pro Pro	Arg Ala	Arg Ile	Thr Gly	Tyr Ile	Ile Lys	Tyr Glu	Lys
1805		1810		1815			

Pro Gly	Ser Pro	Pro Arg	Glu Val	Val Val	Pro Arg	Pro Arg	Pro Gly
1820		1825		1830			

Val Thr Glu Ala Thr Ile Thr Gly Leu Glu Pro Gly Thr Glu Tyr
 1835 1840 1845

Thr Ile Gln Val Ile Ala Leu Lys Asn Asn Gln Lys Ser Glu Pro
 1850 1855 1860

Leu Ile Gly Arg Lys Lys Thr Asp Glu Leu Pro Gln Leu Val Thr
 1865 1870 1875

Leu Pro His Pro Asn Leu His Gly Pro Glu Ile Leu Asp Val Pro
 1880 1885 1890

Ser Thr Val Gln Lys Thr Pro Phe Ile Thr Asn Pro Gly Tyr Asp
 1895 1900 1905

Thr Gly Asn Gly Ile Gln Leu Pro Gly Thr Ser Gly Gln Gln Pro
 1910 1915 1920

Ser Leu Gly Gln Gln Met Ile Phe Glu Glu His Gly Phe Arg Arg
 1925 1930 1935

Thr Thr Pro Pro Thr Thr Ala Thr Pro Val Arg His Arg Pro Arg
 1940 1945 1950

Pro Tyr Pro Pro Asn Val Asn Glu Glu Ile Gln Ile Gly His Val

1955		1960		1965
Pro Arg Gly Asp Val Asp His His Leu Tyr Pro His Val Val Gly				
1970		1975		1980
Leu Asn Pro Asn Ala Ser Thr Gly Gln Glu Ala Leu Ser Gln Thr				
1985		1990		1995
Thr Ile Ser Trp Thr Pro Phe Gln Glu Ser Ser Glu Tyr Ile Ile				
2000		2005		2010
Ser Cys His Pro Val Gly Ile Asp Glu Glu Pro Leu Gln Phe Arg				
2015		2020		2025
Val Pro Gly Thr Ser Ala Ser Ala Thr Leu Thr Gly Leu Thr Arg				
2030		2035		2040
Gly Ala Thr Tyr Asn Ile Ile Val Glu Ala Val Lys Asp Gln Gln				
2045		2050		2055
Arg Gln Lys Val Arg Glu Glu Val Val Thr Val Gly Asn Ser Val				
2060		2065		2070
Asp Gln Gly Leu Ser Gln Pro Thr Asp Asp Ser Cys Phe Asp Pro				
2075		2080		2085

Tyr Thr	Val Ser His	Tyr Ala	Ile Gly Glu Glu Trp	Glu Arg Leu
2090		2095		2100

Ser Asp	Ser Gly Phe	Lys Leu	Ser Cys Gln Cys Leu	Gly Phe Gly
2105		2110		2115

Ser Gly	His Phe Arg	Cys Asp	Ser Ser Lys Trp Cys	His Asp Asn
2120		2125		2130

Gly Val	Asn Tyr Lys	Ile Gly	Glu Lys Trp Asp Arg	Gln Gly Glu
2135		2140		2145

Asn Gly	Gln Met Met	Ser Cys	Thr Cys Leu Gly Asn	Gly Lys Gly
2150		2155		2160

Glu Phe	Lys Cys Asp	Pro His	Glu Ala Thr Cys Tyr	Asp Asp Gly
2165		2170		2175

Lys Thr	Tyr His Val	Gly Glu	Gln Trp Gln Lys Glu	Tyr Leu Gly
2180		2185		2190

Ala Ile	Cys Ser Cys	Thr Cys	Phe Gly Gly Gln Arg	Gly Trp Arg
2195		2200		2205

Cys Asp	Asn Cys Arg	Arg Pro	Gly Ala Glu Pro Gly	Asn Glu Gly
---------	-------------	---------	---------------------	-------------

2210 2215 2220

Ser Thr Ala His Ser Tyr Asn Gln Tyr Ser Gln Arg Tyr His Gln
2225 2230 2235

Arg Thr Asn Thr Asn Val Asn Cys Pro Ile Glu Cys Phe Met Pro
2240 2245 2250

Leu Asp Val Gln Ala Asp Arg Glu Asp Ser Arg Glu
2255 2260 2265

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<213> Artificial

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<223> short interfering RNA and refers to short double-stranded RNA of 10 or more base pairs which are artificially chemically synthesized or biochemically synthesized

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AAGCAGCAGG ACUUCUCAA G

21

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<309> 1999-02-08

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Met Glu Arg Arg Asn His Thr Gly Arg Val Ser Glu Phe Val Leu Leu

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ggt ttc cca gct cct gcc cca ctg cgg gca cta cta ttt ttc ctt tct 96

Gly Phe Pro Ala Pro Ala Pro Leu Arg Ala Leu Leu Phe Phe Leu Ser

20 25 30

ctg ttg gcc tac gtg ttg gtg ctg act gaa aac ata ctc atc att aca 144

Leu Leu Ala Tyr Val Leu Val Leu Thr Glu Asn Ile Leu Ile Ile Thr

35 40 45

gca att agg aac cac ccc acc ctc cac aaa ccc atg tat ttt ttc ttg 192

Ala Ile Arg Asn His Pro Thr Leu His Lys Pro Met Tyr Phe Phe Leu

50 55 60

gct aat atg tca ttc ctg gag att tgg tat gtc act gtt acg att cct 240

Ala Asn Met Ser Phe Leu Glu Ile Trp Tyr Val Thr Val Thr Ile Pro

65 70 75 80

aag atg ctt gct ggc ttc att ggt tcc gag gag aat cat gga cag ctg 288

Lys Met Leu Ala Gly Phe Ile Gly Ser Glu Glu Asn His Gly Gln Leu

85 90 95

atc tcc ttt gag gca tgc atg aca cag ctc tac ttt ttc cta ggc ttg 336

Ile Ser Phe Glu Ala Cys Met Thr Gln Leu Tyr Phe Phe Leu Gly Leu	
100 105 110	
ggg tgc aca gag tgt gtc ctt ctt gct gtc atg gcc tat gac cgc tat	384
Gly Cys Thr Glu Cys Val Leu Leu Ala Val Met Ala Tyr Asp Arg Tyr	
115 120 125	
gtg gcc atc tgt cac cca ctc cac tat cct gtc att gtc agt agc cgg	432
Val Ala Ile Cys His Pro Leu His Tyr Pro Val Ile Val Ser Ser Arg	
130 135 140	
cta tgt gtg cag atg gca gct gga tcc tgg gct gga ggt ttt ggt atc	480
Leu Cys Val Gln Met Ala Ala Gly Ser Trp Ala Gly Gly Phe Gly Ile	
145 150 155 160	
tcc atg gtt aaa gtt ttc ctc att tct cgc ctg tct tac tgt ggc ccc	528
Ser Met Val Lys Val Phe Leu Ile Ser Arg Leu Ser Tyr Cys Gly Pro	
165 170 175	
aac acc atc aac cac ttt ttc tgt gat gtt tct cca ttg ctc aac ttg	576
Asn Thr Ile Asn His Phe Phe Cys Asp Val Ser Pro Leu Leu Asn Leu	
180 185 190	
tca tgc act gac atg tcc aca gca gag ctt aca gac ttt atc ctg gcc	624
Ser Cys Thr Asp Met Ser Thr Ala Glu Leu Thr Asp Phe Ile Leu Ala	
195 200 205	
att ttt att ctg ctg ggg cca ctc tct gtc act ggg gct tcc tat atg	672
Ile Phe Ile Leu Leu Gly Pro Leu Ser Val Thr Gly Ala Ser Tyr Met	
210 215 220	
gcc atc aca ggt gca gtg atg cgc atc ccc tca gct gct ggc cgc cat	720
Ala Ile Thr Gly Ala Val Met Arg Ile Pro Ser Ala Ala Gly Arg His	
225 230 235 240	

aag gcc ttt tca acc tgt gcc tcc cac ctc act gtt gtg att atc ttc 768

Lys Ala Phe Ser Thr Cys Ala Ser His Leu Thr Val Val Ile Ile Phe

245

250

255

tat gca gcc agt att ttc atc tat gcc agg cct aag gca ctc tca gct 816

Tyr Ala Ala Ser Ile Phe Ile Tyr Ala Arg Pro Lys Ala Leu Ser Ala

260

265

270

ttt gac acc aac aag ctg gtc tct gta ctc tac gct gtc att gta cca 864

Phe Asp Thr Asn Lys Leu Val Ser Val Leu Tyr Ala Val Ile Val Pro

275

280

285

ttg ctc aat ccc atc atc tac tgc ttg cgc aat caa gaa gtc aaa aaa 912

Leu Leu Asn Pro Ile Ile Tyr Cys Leu Arg Asn Gln Glu Val Lys Lys

290

295

300

gcc cta cgt cgc act ctg cac ctg gcc caa ggc cag gac gcc aat acc 960

Ala Leu Arg Arg Thr Leu His Leu Ala Gln Gly Gln Asp Ala Asn Thr

305

310

315

320

aag aaa tcc agc aga gat ggt tag 984

Lys Lys Ser Ser Arg Asp Gly

325

<210> 14

<211> 327

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<213> Mus musculus

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	20	25	30
Leu Leu Ala Tyr Val Leu Val Leu Thr Glu Asn Ile Leu Ile Ile Thr			
	35	40	45
Ala Ile Arg Asn His Pro Thr Leu His Lys Pro Met Tyr Phe Phe Leu			
	50	55	60
Ala Asn Met Ser Phe Leu Glu Ile Trp Tyr Val Thr Val Thr Ile Pro			
	65	70	75
Lys Met Leu Ala Gly Phe Ile Gly Ser Glu Glu Asn His Gly Gln Leu			
	85	90	95
Ile Ser Phe Glu Ala Cys Met Thr Gln Leu Tyr Phe Phe Leu Gly Leu			
	100	105	110
Gly Cys Thr Glu Cys Val Leu Leu Ala Val Met Ala Tyr Asp Arg Tyr			
	115	120	125
Val Ala Ile Cys His Pro Leu His Tyr Pro Val Ile Val Ser Ser Arg			
	130	135	140

Leu Cys Val Gln Met Ala Ala Gly Ser Trp Ala Gly Gly Phe Gly Ile
145 150 155 160

Ser Met Val Lys Val Phe Leu Ile Ser Arg Leu Ser Tyr Cys Gly Pro
 165 170 175

Asn Thr Ile Asn His Phe Phe Cys Asp Val Ser Pro Leu Leu Asn Leu
 180 185 190

Ser Cys Thr Asp Met Ser Thr Ala Glu Leu Thr Asp Phe Ile Leu Ala
 195 200 205

Ile Phe Ile Leu Leu Gly Pro Leu Ser Val Thr Gly Ala Ser Tyr Met
 210 215 220

Ala Ile Thr Gly Ala Val Met Arg Ile Pro Ser Ala Ala Gly Arg His
225 230 235 240

Lys Ala Phe Ser Thr Cys Ala Ser His Leu Thr Val Val Ile Ile Phe
 245 250 255

Tyr Ala Ala Ser Ile Phe Ile Tyr Ala Arg Pro Lys Ala Leu Ser Ala
 260 265 270

Phe Asp Thr Asn Lys Leu Val Ser Val Leu Tyr Ala Val Ile Val Pro

275 280 285

Leu Leu Asn Pro Ile Ile Tyr Cys Leu Arg Asn Gln Glu Val Lys Lys
 290 295 300

Ala Leu Arg Arg Thr Leu His Leu Ala Gln Gly Gln Asp Ala Asn Thr
 305 310 315 320

Lys Lys Ser Ser Arg Asp Gly
 325

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gaattgggat taaactc atg tct ctt ttt ccc caa aga aat tta gat gcc	170
Met Ser Leu Phe Pro Gln Arg Asn Leu Asp Ala	
1 5 10	
atg aac aga tca gca gca cat gta acc gaa ttt gtt ctc ttg gga ttt	218
Met Asn Arg Ser Ala Ala His Val Thr Glu Phe Val Leu Leu Gly Phe	
15 20 25	
cct ggt tcc tgg aag ata cag att ttc ctc ttc gtg ttg ttt ttg gtg	266
Pro Gly Ser Trp Lys Ile Gln Ile Phe Leu Phe Val Leu Phe Leu Val	
30 35 40	
ttt tat gtc ttg aca ttg ttg gga aat gga gcc atc atc tgt gca gta	314
Phe Tyr Val Leu Thr Leu Leu Gly Asn Gly Ala Ile Ile Cys Ala Val	
45 50 55	
aga tgt gac tca cgt cta cat acc ccc atg tac ttc ctc ctg gga aat	362
Arg Cys Asp Ser Arg Leu His Thr Pro Met Tyr Phe Leu Leu Gly Asn	
60 65 70 75	
ttt tcc ttc ctt gaa atc tgg tat gtt tcc tcc act att cct aac ata	410
Phe Ser Phe Leu Glu Ile Trp Tyr Val Ser Ser Thr Ile Pro Asn Ile	
80 85 90	
cta gcc aac att ctg tct aag acc aag gcc atc tca ttt tca ggg tgc	458
Leu Ala Asn Ile Leu Ser Lys Thr Lys Ala Ile Ser Phe Ser Gly Cys	
95 100 105	
ttc ctg cag ttc tat ttc ttc ttt tca ctg ggt aca act gaa tgt ctc	506
Phe Leu Gln Phe Tyr Phe Phe Phe Ser Leu Gly Thr Thr Glu Cys Leu	
110 115 120	
ttc ctg gca gta atg gct tat gat agg tac ctg gcc att tgc cgc cca	554

Phe	Leu	Ala	Val	Met	Ala	Tyr	Asp	Arg	Tyr	Leu	Ala	Ile	Cys	Arg	Pro	
125					130					135						
tta	cat	tac	cct	act	atc	atg	act	agg	agg	ctg	tgt	tgc	att	ctg	gta	602
Leu	His	Tyr	Pro	Thr	Ile	Met	Thr	Arg	Arg	Leu	Cys	Cys	Ile	Leu	Val	
140					145					150				155		
tcc	tca	tgc	tgg	ctc	att	gga	ttt	ctt	ggg	tac	cca	atc	cct	atc	ttc	650
Ser	Ser	Cys	Trp	Leu	Ile	Gly	Phe	Leu	Gly	Tyr	Pro	Ile	Pro	Ile	Phe	
					160					165				170		
tcc	att	tcc	cag	ctt	ccc	ttc	tgt	ggg	tct	aat	atc	att	gat	cac	ttc	698
Ser	Ile	Ser	Gln	Leu	Pro	Phe	Cys	Gly	Ser	Asn	Ile	Ile	Asp	His	Phe	
					175					180				185		
ctc	tgt	gac	atg	gac	cca	ttg	atg	gct	ttg	tcc	tgt	gcc	cca	gct	cct	746
Leu	Cys	Asp	Met	Asp	Pro	Leu	Met	Ala	Leu	Ser	Cys	Ala	Pro	Ala	Pro	
					190					195				200		
att	act	gaa	ttt	att	ttt	tat	gcc	caa	agt	tcc	ttt	gtc	ctc	ttt	ttc	794
Ile	Thr	Glu	Phe	Ile	Phe	Tyr	Ala	Gln	Ser	Ser	Phe	Val	Leu	Phe	Phe	
					205					210				215		
act	att	gca	tac	att	ctt	cgg	tcc	tat	att	ttg	ttg	ctc	agg	gct	gtt	842
Thr	Ile	Ala	Tyr	Ile	Leu	Arg	Ser	Tyr	Ile	Leu	Leu	Leu	Arg	Ala	Val	
220					225					230				235		
ttt	cag	gtt	cct	tct	gca	gct	ggc	cga	cga	aaa	gcc	ttc	tct	acc	tgt	890
Phe	Gln	Val	Pro	Ser	Ala	Ala	Gly	Arg	Arg	Lys	Ala	Phe	Ser	Thr	Cys	
					240					245				250		
ggg	tcc	cat	tta	gtt	gtg	gtg	tca	ctc	ttc	tat	ggg	aca	gta	atg	gta	938
Gly	Ser	His	Leu	Val	Val	Val	Ser	Leu	Phe	Tyr	Gly	Thr	Val	Met	Val	
					255					260				265		

atg tat gtg agt cct aca tat ggc att cca att ttg atg cag aag atc 986
 Met Tyr Val Ser Pro Thr Tyr Gly Ile Pro Ile Leu Met Gln Lys Ile
 270 275 280

ctt aca ctt gta tac tct gta atg act cct ctc ttt aat cct ctg att 1034
 Leu Thr Leu Val Tyr Ser Val Met Thr Pro Leu Phe Asn Pro Leu Ile
 285 290 295

tat agc ctt cgt aac aag gac atg aaa ctt gct ctg aga aat gtt ttg 1082
 Tyr Ser Leu Arg Asn Lys Asp Met Lys Leu Ala Leu Arg Asn Val Leu
 300 305 310 315

tta gga atg aga att gtc aaa aat atg taa ttcaaagctg tttcatactc 1132
 Leu Gly Met Arg Ile Val Lys Asn Met
 320

acatgttcta ataaagaaaa aactggagat gaatcaattc attcagttgt ctttaccctt 1192

tgttctatgt ttttgagaca ctgtctcatg tggccctggc tagcctcaaa ctcattctct 1252

agccaaggat gaccttgcaa agatcactta tgtatactct catatcatct gccaatagtg 1312

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<212> PRT

<213> Mus musculus

<400> 16

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Ile Gln Ile Phe Leu Phe Val Leu Phe Leu Val Phe Tyr Val Leu Thr			
	35	40	45
Leu Leu Gly Asn Gly Ala Ile Ile Cys Ala Val Arg Cys Asp Ser Arg			
	50	55	60
Leu His Thr Pro Met Tyr Phe Leu Leu Gly Asn Phe Ser Phe Leu Glu			
65	70	75	80
Ile Trp Tyr Val Ser Ser Thr Ile Pro Asn Ile Leu Ala Asn Ile Leu			
	85	90	95
Ser Lys Thr Lys Ala Ile Ser Phe Ser Gly Cys Phe Leu Gln Phe Tyr			
	100	105	110
Phe Phe Phe Ser Leu Gly Thr Thr Glu Cys Leu Phe Leu Ala Val Met			
	115	120	125
Ala Tyr Asp Arg Tyr Leu Ala Ile Cys Arg Pro Leu His Tyr Pro Thr			
130	135	140	

Ile Met Thr Arg Arg Leu Cys Cys Ile Leu Val Ser Ser Cys Trp Leu
145 150 155 160

Ile Gly Phe Leu Gly Tyr Pro Ile Pro Ile Phe Ser Ile Ser Gln Leu
165 170 175

Pro Phe Cys Gly Ser Asn Ile Ile Asp His Phe Leu Cys Asp Met Asp
180 185 190

Pro Leu Met Ala Leu Ser Cys Ala Pro Ala Pro Ile Thr Glu Phe Ile
195 200 205

Phe Tyr Ala Gln Ser Ser Phe Val Leu Phe Phe Thr Ile Ala Tyr Ile
210 215 220

Leu Arg Ser Tyr Ile Leu Leu Leu Arg Ala Val Phe Gln Val Pro Ser
225 230 235 240

Ala Ala Gly Arg Arg Lys Ala Phe Ser Thr Cys Gly Ser His Leu Val
245 250 255

Val Val Ser Leu Phe Tyr Gly Thr Val Met Val Met Tyr Val Ser Pro
260 265 270

Thr Tyr Gly Ile Pro Ile Leu Met Gln Lys Ile Leu Thr Leu Val Tyr

275 280 285

Ser Val Met Thr Pro Leu Phe Asn Pro Leu Ile Tyr Ser Leu Arg Asn
290 295 300

Lys Asp Met Lys Leu Ala Leu Arg Asn Val Leu Leu Gly Met Arg Ile
305 310 315 320

Val Lys Asn Met

<210> 17

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<212> DNA

<213> Mus musculus

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<308> AF121980

<309> 1999-04-25

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<222> (99)..(99)

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<400> 17

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Met Leu Gly Trp

1

agc aat ggc acc tac aat gag tcc tac acc agc ttc ctc ctc atg ggc 165

Ser Asn Gly Thr Tyr Asn Glu Ser Tyr Thr Ser Phe Leu Leu Met Gly

5 10 15 20

ttc cca ggg atg cag gaa gcc aga gcc ctc ctg gtg ctg ccc ttc ctc 213

Phe Pro Gly Met Gln Glu Ala Arg Ala Leu Leu Val Leu Pro Phe Leu

25 30 35

agc ctc tac ctg gtg atc ctc ttc acc aat gcc ctg gtc atc cac acg 261

Ser Leu Tyr Leu Val Ile Leu Phe Thr Asn Ala Leu Val Ile His Thr

40 45 50

gtg gca tcc cag cgc agc ctg cac cag ccc atg tac ctg ctc att gcc 309

Val Ala Ser Gln Arg Ser Leu His Gln Pro Met Tyr Leu Leu Ile Ala

55 60 65

ctg ctc ctg gct gtc aat atc tgt gct gcc acc acg gtg ctg ccc ccc 357

Leu Leu Leu Ala Val Asn Ile Cys Ala Ala Thr Thr Val Leu Pro Pro

70 75 80

atg ctc ttc agc ttc tcc aca cgc ttc aac cgc atc tcc ctc cct cga 405

Met Leu Phe Ser Phe Ser Thr Arg Phe Asn Arg Ile Ser Leu Pro Arg

85 90 95 100

tgc ttg gga cag atg ttc tgc atc tac ttt ctg gtt tct atg gac tgc 453

Cys Leu Gly Gln Met Phe Cys Ile Tyr Phe Leu Val Ser Met Asp Cys

105	110	115	
aac atc ctc ctg gtc atg gct cta gat cgc tat gtg gct atc tgc tac			501
Asn Ile Leu Leu Val Met Ala Leu Asp Arg Tyr Val Ala Ile Cys Tyr			
120	125	130	
cct ctc cgc tac cca gaa ata gtg aca gga cag tta ctg gct ggt ctg			549
Pro Leu Arg Tyr Pro Glu Ile Val Thr Gly Gln Leu Leu Ala Gly Leu			
135	140	145	
gtg gtg ttg gca gtc acc agg agc aca agc att gtt gct cca gtg gtg			597
Val Val Leu Ala Val Thr Arg Ser Thr Ser Ile Val Ala Pro Val Val			
150	155	160	
gtg ctg gcc tcg cgg gtt cgc ttc tgc cgc tca gat gtg atc cgc cac			645
Val Leu Ala Ser Arg Val Arg Phe Cys Arg Ser Asp Val Ile Arg His			
165	170	175	180
ttt gcc tgt gag cac atg gcc ctg atg aag ctc tcc tgt gga gac atc			693
Phe Ala Cys Glu His Met Ala Leu Met Lys Leu Ser Cys Gly Asp Ile			
185	190	195	
tcg ctg aat aaa acg gcg gga ctc att att cga acc ttt aat aga gtc			741
Ser Leu Asn Lys Thr Ala Gly Leu Ile Ile Arg Thr Phe Asn Arg Val			
200	205	210	
ctg gat atg ctc ctt cta ggc acc tcc tac tcc cgc atc atc cat gct			789
Leu Asp Met Leu Leu Leu Gly Thr Ser Tyr Ser Arg Ile Ile His Ala			
215	220	225	
gcc ttc agg atc tca tca ggt gga gca cgg tcc aaa gcc ctg aac acc			837
Ala Phe Arg Ile Ser Ser Gly Gly Ala Arg Ser Lys Ala Leu Asn Thr			
230	235	240	

tgt ggt tcc cac ctg ctg gtc atc ttc acc gtc tac tcc tcc acc atg 885
 Cys Gly Ser His Leu Leu Val Ile Phe Thr Val Tyr Ser Ser Thr Met
 245 250 255 260

tcc tca tcc att gtc tac cgt gtg gct cgc act gcc tcc caa gat gtg 933
 Ser Ser Ser Ile Val Tyr Arg Val Ala Arg Thr Ala Ser Gln Asp Val
 265 270 275

cac aac ctg ctc agt gct ttc tat ctg ttg ctc ccg tgt ctg gtc aac 981
 His Asn Leu Leu Ser Ala Phe Tyr Leu Leu Leu Pro Cys Leu Val Asn
 280 285 290

ccc atc atc tac ggg gcc aga acc aag gaa atc agg cag cac ctg gta 1029
 Pro Ile Ile Tyr Gly Ala Arg Thr Lys Glu Ile Arg Gln His Leu Val
 295 300 305

agg tca ttc ctg agt gca ggc ccc tga ctctcctatg atcagtcctg 1076
 Arg Ser Phe Leu Ser Ala Gly Pro
 310 315

gttggtcccct cagtattcct ggtgaaactg aggaaggaag aaatggagtc agagggac 1134

<210> 18

<211> 316

<212> PRT

<213> Mus musculus

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Leu Leu Met Gly Phe Pro Gly Met Gln Glu Ala Arg Ala Leu Leu Val
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Leu Pro Phe Leu Ser Leu Tyr Leu Val Ile Leu Phe Thr Asn Ala Leu
 35 40 45

Val Ile His Thr Val Ala Ser Gln Arg Ser Leu His Gln Pro Met Tyr
 50 55 60

Leu Leu Ile Ala Leu Leu Leu Ala Val Asn Ile Cys Ala Ala Thr Thr
 65 70 75 80

Val Leu Pro Pro Met Leu Phe Ser Phe Ser Thr Arg Phe Asn Arg Ile
 85 90 95

Ser Leu Pro Arg Cys Leu Gly Gln Met Phe Cys Ile Tyr Phe Leu Val
 100 105 110

Ser Met Asp Cys Asn Ile Leu Leu Val Met Ala Leu Asp Arg Tyr Val
 115 120 125

Ala Ile Cys Tyr Pro Leu Arg Tyr Pro Glu Ile Val Thr Gly Gln Leu
 130 135 140

Leu Ala Gly Leu Val Val Leu Ala Val Thr Arg Ser Thr Ser Ile Val
 145 150 155 160

Ala Pro Val Val Val Leu Ala Ser Arg Val Arg Phe Cys Arg Ser Asp
165 170 175

Val Ile Arg His Phe Ala Cys Glu His Met Ala Leu Met Lys Leu Ser
180 185 190

Cys Gly Asp Ile Ser Leu Asn Lys Thr Ala Gly Leu Ile Ile Arg Thr
195 200 205

Phe Asn Arg Val Leu Asp Met Leu Leu Leu Gly Thr Ser Tyr Ser Arg
210 215 220

Ile Ile His Ala Ala Phe Arg Ile Ser Ser Gly Gly Ala Arg Ser Lys
225 230 235 240

Ala Leu Asn Thr Cys Gly Ser His Leu Leu Val Ile Phe Thr Val Tyr
245 250 255

Ser Ser Thr Met Ser Ser Ser Ile Val Tyr Arg Val Ala Arg Thr Ala
260 265 270

Ser Gln Asp Val His Asn Leu Leu Ser Ala Phe Tyr Leu Leu Leu Pro
275 280 285

Cys Leu Val Asn Pro Ile Ile Tyr Gly Ala Arg Thr Lys Glu Ile Arg
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Gln His Leu Val Arg Ser Phe Leu Ser Ala Gly Pro
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ggataagcct gcttttttat actaagttgg cattataaaa aagcattgct tatcaatttg 180

ttgcaacgaa caggtcacta tcagtcaaaa taaaatcatt atttgatttc aattttgtcc 240

cactccctgc ctctgtcatc acgatactgt gatgccatgg tgtccgactt atg ccc 296

Met Pro

gag aag atg ttg agc aaa ctt atc gct tat ctg ctt ctc ata gag tct	344
Glu Lys Met Leu Ser Lys Leu Ile Ala Tyr Leu Leu Leu Ile Glu Ser	
5 10 15	
tgc aga caa act gcg caa ctc gtg aaa ggt agg cgg atc tgg gtc gac	392
Cys Arg Gln Thr Ala Gln Leu Val Lys Gly Arg Arg Ile Trp Val Asp	
20 25 30	
tct agg cct cac tgg cct aat acg act cac tat agg gag ctc gag gat	440
Ser Arg Pro His Trp Pro Asn Thr Thr His Tyr Arg Glu Leu Glu Asp	
35 40 45 50	
cag cat gtt tgg att gct att ccc ttc tgc tcc atg tac atc ctt gct	488
Gln His Val Trp Ile Ala Ile Pro Phe Cys Ser Met Tyr Ile Leu Ala	
55 60 65	
ctg gtt gga aat ggt acc atc ctc tat atc att ata aca gac agg gct	536
Leu Val Gly Asn Gly Thr Ile Leu Tyr Ile Ile Ile Thr Asp Arg Ala	
70 75 80	
ctc cat gag cca atg tac ctc ttc ttg tgt ctg ctt tct atc act gat	584
Leu His Glu Pro Met Tyr Leu Phe Leu Cys Leu Leu Ser Ile Thr Asp	
85 90 95	
ctg gtt ctc tgt tca aca aca ttg cct aaa atg ctg gca ata ttc tgg	632
Leu Val Leu Cys Ser Thr Thr Leu Pro Lys Met Leu Ala Ile Phe Trp	
100 105 110	
ctc aga tcc cat gtc att tcc tac cat ggc tgc ctc act cag atg ttt	680
Leu Arg Ser His Val Ile Ser Tyr His Gly Cys Leu Thr Gln Met Phe	
115 120 125 130	

ttt gta cat gca gtc ttt gcc aca gag tca gct gtt ctg ctg gcc atg	728
Phe Val His Ala Val Phe Ala Thr Glu Ser Ala Val Leu Leu Ala Met	
135 140 145	
gct ttt gat cga tat gtt gct atc tgc aga cca ctc cac tat aca tcc	776
Ala Phe Asp Arg Tyr Val Ala Ile Cys Arg Pro Leu His Tyr Thr Ser	
150 155 160	
atc ctc aat gct gtt gta att ggg aag att ggc ctg gca tgc gtg act	824
Ile Leu Asn Ala Val Val Ile Gly Lys Ile Gly Leu Ala Cys Val Thr	
165 170 175	
cgt ggc ctt ctc ttt gtc ttc ccc ttt gtc att ctc att gaa cgt tta	872
Arg Gly Leu Leu Phe Val Phe Pro Phe Val Ile Leu Ile Glu Arg Leu	
180 185 190	
ccc ttc tgt gga cat cat ata atc cct cac act tac tgt gag cac atg	920
Pro Phe Cys Gly His His Ile Ile Pro His Thr Tyr Cys Glu His Met	
195 200 205 210	
ggc ata gcc aag ctc gcc tgt gcc agc atc aag cct aac acc atc tat	968
Gly Ile Ala Lys Leu Ala Cys Ala Ser Ile Lys Pro Asn Thr Ile Tyr	
215 220 225	
ggg ctt act gta gca ctt tca gtc act ggc atg gat gtg gtc ctc att	1016
Gly Leu Thr Val Ala Leu Ser Val Thr Gly Met Asp Val Val Leu Ile	
230 235 240	
gca acc tcc tac atc ctg att ctg cag gcc gtg ctg cga ctg ccc tca	1064
Ala Thr Ser Tyr Ile Leu Ile Leu Gln Ala Val Leu Arg Leu Pro Ser	
245 250 255	
aag gat gcc cag ttc cga gca ttc agc aca tgt gga gcc cac att tgt	1112
Lys Asp Ala Gln Phe Arg Ala Phe Ser Thr Cys Gly Ala His Ile Cys	

260	265	270	
gta att ctt gtc ttc tat atc ccc gca ttc ttt tca ttt ttc act cac			1160
Val Ile Leu Val Phe Tyr Ile Pro Ala Phe Phe Ser Phe Phe Thr His			
275	280	285	290
cgc ttt ggt cac cac gtg cct cct cag gta cac atc ata ctt gca aat			1208
Arg Phe Gly His His Val Pro Pro Gln Val His Ile Ile Leu Ala Asn			
	295	300	305
ctt tat ctc ctt gtg cct cct gtt ctc aac ccc cta gtc tat ggc atc			1256
Leu Tyr Leu Leu Val Pro Pro Val Leu Asn Pro Leu Val Tyr Gly Ile			
	310	315	320
aat acc aaa caa atc cgc ctg aga ata ctt gac ttt ttt gta aag aga			1304
Asn Thr Lys Gln Ile Arg Leu Arg Ile Leu Asp Phe Phe Val Lys Arg			
	325	330	335
agg tga caataatctc cacatataacc aaaggctaata gagttcctgg ctttagtttg			1360
Arg			
ctgcttctgc tgatctcagt aagtcagtgat atgtacattt aagattttga gatctagagc			1420
a			1421
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Glu Ser Cys Arg Gln Thr Ala Gln Leu Val Lys Gly Arg Arg Ile Trp
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Val Asp Ser Arg Pro His Trp Pro Asn Thr Thr His Tyr Arg Glu Leu
 35 40 45

Glu Asp Gln His Val Trp Ile Ala Ile Pro Phe Cys Ser Met Tyr Ile
 50 55 60

Leu Ala Leu Val Gly Asn Gly Thr Ile Leu Tyr Ile Ile Ile Thr Asp
 65 70 75 80

Arg Ala Leu His Glu Pro Met Tyr Leu Phe Leu Cys Leu Leu Ser Ile
 85 90 95

Thr Asp Leu Val Leu Cys Ser Thr Thr Leu Pro Lys Met Leu Ala Ile
 100 105 110

Phe Trp Leu Arg Ser His Val Ile Ser Tyr His Gly Cys Leu Thr Gln
 115 120 125

Met Phe Phe Val His Ala Val Phe Ala Thr Glu Ser Ala Val Leu Leu
 130 135 140

Ala Met Ala Phe Asp Arg Tyr Val Ala Ile Cys Arg Pro Leu His Tyr
145 150 155 160

Thr Ser Ile Leu Asn Ala Val Val Ile Gly Lys Ile Gly Leu Ala Cys
165 170 175

Val Thr Arg Gly Leu Leu Phe Val Phe Pro Phe Val Ile Leu Ile Glu
180 185 190

Arg Leu Pro Phe Cys Gly His His Ile Ile Pro His Thr Tyr Cys Glu
195 200 205

His Met Gly Ile Ala Lys Leu Ala Cys Ala Ser Ile Lys Pro Asn Thr
210 215 220

Ile Tyr Gly Leu Thr Val Ala Leu Ser Val Thr Gly Met Asp Val Val
225 230 235 240

Leu Ile Ala Thr Ser Tyr Ile Leu Ile Leu Gln Ala Val Leu Arg Leu
245 250 255

Pro Ser Lys Asp Ala Gln Phe Arg Ala Phe Ser Thr Cys Gly Ala His
260 265 270

Ile Cys Val Ile Leu Val Phe Tyr Ile Pro Ala Phe Phe Ser Phe Phe
 275 280 285

Thr His Arg Phe Gly His His Val Pro Pro Gln Val His Ile Ile Leu
 290 295 300

Ala Asn Leu Tyr Leu Leu Val Pro Pro Val Leu Asn Pro Leu Val Tyr
 305 310 315 320

Gly Ile Asn Thr Lys Gln Ile Arg Leu Arg Ile Leu Asp Phe Phe Val
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Lys Arg Arg

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ttc tcc agc ttt gga aag cat cag ata acc ctc ttt gtg gtt ttc cta 96
 Phe Ser Ser Phe Gly Lys His Gln Ile Thr Leu Phe Val Val Phe Leu
 20 25 30

acc atc tac att tta act ctg gct ggc aac atc att ata gtg aca atc 144
 Thr Ile Tyr Ile Leu Thr Leu Ala Gly Asn Ile Ile Ile Val Thr Ile
 35 40 45

aca cac ata gac cac cac ctt cac act ccc atg tac ttc ttt ctg agc 192
 Thr His Ile Asp His His Leu His Thr Pro Met Tyr Phe Phe Leu Ser
 50 55 60

atg ttg gca agc tca gag act gtg tac aca ctg gtc att gtc cca cga 240
 Met Leu Ala Ser Ser Glu Thr Val Tyr Thr Leu Val Ile Val Pro Arg
 65 70 75 80

atg ctt tcc agc ctg att ttt tac aac ctt ccc ata tcc ttg gca ggc 288
 Met Leu Ser Ser Leu Ile Phe Tyr Asn Leu Pro Ile Ser Leu Ala Gly
 85 90 95

tgc gca acc caa atg ttc ttt ttt gtc act ttg gcc acc aac aac tgc 336
 Cys Ala Thr Gln Met Phe Phe Phe Val Thr Leu Ala Thr Asn Asn Cys
 100 105 110

ttt ctg ctc aca gca atg ggt tat gat cgt tat gtg gct att tgt aat 384
 Phe Leu Leu Thr Ala Met Gly Tyr Asp Arg Tyr Val Ala Ile Cys Asn
 115 120 125

cct ctg aga tat aca atc atc atg agc aag gga atg tgt gcc ttg ttg	432
Pro Leu Arg Tyr Thr Ile Ile Met Ser Lys Gly Met Cys Ala Leu Leu	
130 135 140	
gtc tgt ggg tct tta ggc act ggc ctg gtt atg gca gtt ctt cat gtg	480
Val Cys Gly Ser Leu Gly Thr Gly Leu Val Met Ala Val Leu His Val	
145 150 155 160	
cca gcc atg ttc cat ttg ccc ttt tgt ggc acg gtg gtg gag cac ttt	528
Pro Ala Met Phe His Leu Pro Phe Cys Gly Thr Val Val Glu His Phe	
165 170 175	
ttc tgt gac ata tac cca gta atg aag ctt tct tgt gtt gat acc act	576
Phe Cys Asp Ile Tyr Pro Val Met Lys Leu Ser Cys Val Asp Thr Thr	
180 185 190	
gtc aat gag ata atc aat tat ggt gta agt tca ttt gta att ctt gtg	624
Val Asn Glu Ile Ile Asn Tyr Gly Val Ser Ser Phe Val Ile Leu Val	
195 200 205	
ccc ata ggg ctg ata ttt atc tcc tat gtg ctc att gtc tct tcc atc	672
Pro Ile Gly Leu Ile Phe Ile Ser Tyr Val Leu Ile Val Ser Ser Ile	
210 215 220	
ctt aaa att gtg tcc act gaa ggc cag aag aaa gcc ttt gcc acc tgt	720
Leu Lys Ile Val Ser Thr Glu Gly Gln Lys Lys Ala Phe Ala Thr Cys	
225 230 235 240	
gcc tct cat ctc act gtg gtc att gtc cac tat ggc tgt gcc tcc att	768
Ala Ser His Leu Thr Val Val Ile Val His Tyr Gly Cys Ala Ser Ile	
245 250 255	
gcc tac ctc aaa ccc aaa tca gaa agt tca gta gaa aaa gac ctt ctt	816
Ala Tyr Leu Lys Pro Lys Ser Glu Ser Ser Val Glu Lys Asp Leu Leu	

260 265 270
 ctc tct gtg acc tac act atc atc act ccc ttg ctg aac cct gtt gtc 864
 Leu Ser Val Thr Tyr Thr Ile Ile Thr Pro Leu Leu Asn Pro Val Val
 275 280 285

tac agc ctc agg aac aaa gaa gtc aaa gat gct cta tgc aga gct gtg 912
 Tyr Ser Leu Arg Asn Lys Glu Val Lys Asp Ala Leu Cys Arg Ala Val
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ggc aga aac act tct taa 930
 Gly Arg Asn Thr Ser
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Phe Ser Ser Phe Gly Lys His Gln Ile Thr Leu Phe Val Val Phe Leu
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Thr Ile Tyr Ile Leu Thr Leu Ala Gly Asn Ile Ile Ile Val Thr Ile
 35 40 45

Thr His Ile Asp His His Leu His Thr Pro Met Tyr Phe Phe Leu Ser
 50 55 60

Met Leu Ala Ser Ser Glu Thr Val Tyr Thr Leu Val Ile Val Pro Arg
 65 70 75 80

Met Leu Ser Ser Leu Ile Phe Tyr Asn Leu Pro Ile Ser Leu Ala Gly
 85 90 95

Cys Ala Thr Gln Met Phe Phe Phe Val Thr Leu Ala Thr Asn Asn Cys
 100 105 110

Phe Leu Leu Thr Ala Met Gly Tyr Asp Arg Tyr Val Ala Ile Cys Asn
 115 120 125

Pro Leu Arg Tyr Thr Ile Ile Met Ser Lys Gly Met Cys Ala Leu Leu
 130 135 140

Val Cys Gly Ser Leu Gly Thr Gly Leu Val Met Ala Val Leu His Val
 145 150 155 160

Pro Ala Met Phe His Leu Pro Phe Cys Gly Thr Val Val Glu His Phe
 165 170 175

Phe Cys Asp Ile Tyr Pro Val Met Lys Leu Ser Cys Val Asp Thr Thr
 180 185 190

Val Asn Glu Ile Ile Asn Tyr Gly Val Ser Ser Phe Val Ile Leu Val
195 200 205

Pro Ile Gly Leu Ile Phe Ile Ser Tyr Val Leu Ile Val Ser Ser Ile
210 215 220

Leu Lys Ile Val Ser Thr Glu Gly Gln Lys Lys Ala Phe Ala Thr Cys
225 230 235 240

Ala Ser His Leu Thr Val Val Ile Val His Tyr Gly Cys Ala Ser Ile
245 250 255

Ala Tyr Leu Lys Pro Lys Ser Glu Ser Ser Val Glu Lys Asp Leu Leu
260 265 270

Leu Ser Val Thr Tyr Thr Ile Ile Thr Pro Leu Leu Asn Pro Val Val
275 280 285

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Gly Arg Asn Thr Ser
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 ggc ttc tca gat tat cct gac ctt aaa gtc cct ctc ttc ttg gtg ttt 96
 Gly Phe Ser Asp Tyr Pro Asp Leu Lys Val Pro Leu Phe Leu Val Phe
 20 25 30
 ctc gtc att tac agc atc act gtg gta gga aat att ggt atg atc ctc 144
 Leu Val Ile Tyr Ser Ile Thr Val Val Gly Asn Ile Gly Met Ile Leu
 35 40 45
 gtg atc aga att aat ccc caa ctg cac tcc cct atg tac ttc ttc ctc 192
 Val Ile Arg Ile Asn Pro Gln Leu His Ser Pro Met Tyr Phe Phe Leu
 50 55 60
 agc cac ctc tcc ttt gtg gat ttc tgc tat tct tcg atc att gct ccc 240
 Ser His Leu Ser Phe Val Asp Phe Cys Tyr Ser Ser Ile Ile Ala Pro

65	70	75	80	
aag atg ctg gtg aac ctt gtt gca aaa gac ata acc att tca ttt gta				288
Lys Met Leu Val Asn Leu Val Ala Lys Asp Ile Thr Ile Ser Phe Val				
	85	90	95	
gaa tgc ata gta caa tat ttt tta ttt tgt gtc ttt gta gta act gaa				336
Glu Cys Ile Val Gln Tyr Phe Leu Phe Cys Val Phe Val Val Thr Glu				
	100	105	110	
gcc ttt tta tta gtg gtt atg gca tat gac cga ttt gtg gct atc tgt				384
Ala Phe Leu Leu Val Val Met Ala Tyr Asp Arg Phe Val Ala Ile Cys				
	115	120	125	
aac cct ctg ctc tac aca gta gcc atg tcc cag aaa ctc tgt atc aca				432
Asn Pro Leu Leu Tyr Thr Val Ala Met Ser Gln Lys Leu Cys Ile Thr				
	130	135	140	
ctg gtg gtg gga tcc tac gca tgg ggg ttc aca tgt tcc ttg aca ctg				480
Leu Val Val Gly Ser Tyr Ala Trp Gly Phe Thr Cys Ser Leu Thr Leu				
	145	150	155	160
acg tgt tct act gtg caa tta tct ttt cat ggt gtc aat agg atc gat				528
Thr Cys Ser Thr Val Gln Leu Ser Phe His Gly Val Asn Arg Ile Asp				
	165	170	175	
cac ttc ttc tgt gaa ctc tct tca ctg cta gcc ctt tct tcc tct gat				576
His Phe Phe Cys Glu Leu Ser Ser Leu Leu Ala Leu Ser Ser Ser Asp				
	180	185	190	
act ctc atc agt caa tta ctg ctg ttt gtc ttt gcc aca ttt aat gct				624
Thr Leu Ile Ser Gln Leu Leu Leu Phe Val Phe Ala Thr Phe Asn Ala				
	195	200	205	

gtc agc aca tta ctc ctt att ctg ttg tct tac ctg ttc att gtt gtc 672
 Val Ser Thr Leu Leu Leu Ile Leu Leu Ser Tyr Leu Phe Ile Val Val
 210 215 220

act gtt ctt aag atg cgt tca gcc agt ggg cgt cgt aag gct ttc tcc 720
 Thr Val Leu Lys Met Arg Ser Ala Ser Gly Arg Arg Lys Ala Phe Ser
 225 230 235 240

acc tgt gca tcc cat ctg gca gcc atc act atc ttc cat ggt acc att 768
 Thr Cys Ala Ser His Leu Ala Ala Ile Thr Ile Phe His Gly Thr Ile
 245 250 255

tta ttc ctt ttt tgt gtt ccc aac tct aag aat tcc agg ctc aca gtc 816
 Leu Phe Leu Phe Cys Val Pro Asn Ser Lys Asn Ser Arg Leu Thr Val
 260 265 270

aaa gtg ggc tct gtg ttt tac aca gtg gtg atc ccc atg ctt aac ccc 864
 Lys Val Gly Ser Val Phe Tyr Thr Val Val Ile Pro Met Leu Asn Pro
 275 280 285

ata atc tat agt ctg aga aat aag gat gtc caa gat act att aga aaa 912
 Ile Ile Tyr Ser Leu Arg Asn Lys Asp Val Gln Asp Thr Ile Arg Lys
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ata atg acc ctt atc tca tgt gtt aag aat gat aga cac aat taa 957
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Gly Phe Ser Asp Tyr Pro Asp Leu Lys Val Pro Leu Phe Leu Val Phe
 20 25 30

Leu Val Ile Tyr Ser Ile Thr Val Val Gly Asn Ile Gly Met Ile Leu
 35 40 45

Val Ile Arg Ile Asn Pro Gln Leu His Ser Pro Met Tyr Phe Phe Leu
 50 55 60

Ser His Leu Ser Phe Val Asp Phe Cys Tyr Ser Ser Ile Ile Ala Pro
 65 70 75 80

Lys Met Leu Val Asn Leu Val Ala Lys Asp Ile Thr Ile Ser Phe Val
 85 90 95

Glu Cys Ile Val Gln Tyr Phe Leu Phe Cys Val Phe Val Val Thr Glu
 100 105 110

Ala Phe Leu Leu Val Val Met Ala Tyr Asp Arg Phe Val Ala Ile Cys
 115 120 125

Asn Pro Leu Leu Tyr Thr Val Ala Met Ser Gln Lys Leu Cys Ile Thr
 130 135 140

Leu Val Val Gly Ser Tyr Ala Trp Gly Phe Thr Cys Ser Leu Thr Leu
 145 150 155 160

Thr Cys Ser Thr Val Gln Leu Ser Phe His Gly Val Asn Arg Ile Asp
 165 170 175

His Phe Phe Cys Glu Leu Ser Ser Leu Leu Ala Leu Ser Ser Ser Asp
 180 185 190

Thr Leu Ile Ser Gln Leu Leu Leu Phe Val Phe Ala Thr Phe Asn Ala
 . 195 200 205

Val Ser Thr Leu Leu Leu Ile Leu Leu Ser Tyr Leu Phe Ile Val Val
 210 215 220

Thr Val Leu Lys Met Arg Ser Ala Ser Gly Arg Arg Lys Ala Phe Ser
 225 230 235 240

Thr Cys Ala Ser His Leu Ala Ala Ile Thr Ile Phe His Gly Thr Ile
 245 250 255

Leu Phe Leu Phe Cys Val Pro Asn Ser Lys Asn Ser Arg Leu Thr Val
 260 265 270

Lys Val Gly Ser Val Phe Tyr Thr Val Val Ile Pro Met Leu Asn Pro
 275 280 285

Ile Ile Tyr Ser Leu Arg Asn Lys Asp Val Gln Asp Thr Ile Arg Lys
 290 295 300

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<309> 2003-02-01

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Met Asp Arg Ser Asn Glu Thr Ala Pro Leu Ser Gly Phe Ile Leu Leu

1	5	10	15	
.				
ggc ctc tct gcc cac cca aag ctg gag aaa acc ttc ttc gtg ctc atc	156			
Gly Leu Ser Ala His Pro Lys Leu Glu Lys Thr Phe Phe Val Leu Ile				
20	25	30		
ctg atg atg tac ctg gtg atc ctg ctg ggc aac ggc gtc ctc atc ctg	204			
Leu Met Met Tyr Leu Val Ile Leu Leu Gly Asn Gly Val Leu Ile Leu				
35	40	45		
gtg agc atc ctc gac tcc cac ctg cac acg ccc atg tac ttc ttc ctg	252			
Val Ser Ile Leu Asp Ser His Leu His Thr Pro Met Tyr Phe Phe Leu				
50	55	60		
ggg aac ctc tcc ttc ctg gac atc tgc tac act acc tcc tct gtc ccc	300			
Gly Asn Leu Ser Phe Leu Asp Ile Cys Tyr Thr Thr Ser Ser Val Pro				
65	70	75	80	
ctc att ctg gac agc ttt ctg act ccc agg aag acc atc tcc ttc tcg	348			
Leu Ile Leu Asp Ser Phe Leu Thr Pro Arg Lys Thr Ile Ser Phe Ser				
85	90	95		
ggc tgt gcc gtg cag atg ttt ctc tcc ttc gcc atg gga gcc acg gag	396			
Gly Cys Ala Val Gln Met Phe Leu Ser Phe Ala Met Gly Ala Thr Glu				
100	105	110		
tgt gtg ctc ctg agt atg atg gcg ttt gat cgt tat gtg gcc atc tgc	444			
Cys Val Leu Leu Ser Met Met Ala Phe Asp Arg Tyr Val Ala Ile Cys				
115	120	125		
aac ccc ctt aga tat cct gtg gtc atg aac aag gct gcc tat gtg ccc	492			
Asn Pro Leu Arg Tyr Pro Val Val Met Asn Lys Ala Ala Tyr Val Pro				
130	135	140		

atg gct gcc agt tcc tgg gca ggt ggt atc act aat tct gta gtg cag	540
Met Ala Ala Ser Ser Trp Ala Gly Gly Ile Thr Asn Ser Val Val Gln	
145 150 155 160	
aca tct ttg gca atg cgg ctg ccc ttc tgt ggg gac aat gtc atc aat	588
Thr Ser Leu Ala Met Arg Leu Pro Phe Cys Gly Asp Asn Val Ile Asn	
165 170 175	
cac ttc acc tgt gag atc ctg gca gtc ctg aaa ctg gcc tgt gct gac	636
His Phe Thr Cys Glu Ile Leu Ala Val Leu Lys Leu Ala Cys Ala Asp	
180 185 190	
atc tcc atc aat gtc atc agc atg gtt gtg gcc aac atg atc ttc ttg	684
Ile Ser Ile Asn Val Ile Ser Met Val Val Ala Asn Met Ile Phe Leu	
195 200 205	
gca gtc cca gtc ctc ttc atc ttt gtc tcc tat gtc ttc atc ctt gtg	732
Ala Val Pro Val Leu Phe Ile Phe Val Ser Tyr Val Phe Ile Leu Val	
210 215 220	
aca atc ctg agg atc ccc tct gct gag ggg agg aag aag gcc ttc tcc	780
Thr Ile Leu Arg Ile Pro Ser Ala Glu Gly Arg Lys Lys Ala Phe Ser	
225 230 235 240	
acc tgc tct gcc cac ctc acc gtg gta ctt gtc ttc tat gga acc atc	828
Thr Cys Ser Ala His Leu Thr Val Val Leu Val Phe Tyr Gly Thr Ile	
245 250 255	
ctc ttc atg tac ggg aag ccc aag tcc aag gac cca ctg ggg gca gac	876
Leu Phe Met Tyr Gly Lys Pro Lys Ser Lys Asp Pro Leu Gly Ala Asp	
260 265 270	
aag cag gac ctt gca gac aag ctc atc tcc ctc ttc tat gga gtg gtg	924
Lys Gln Asp Leu Ala Asp Lys Leu Ile Ser Leu Phe Tyr Gly Val Val	

275 280 285
 acc ccc atg cta aac ccc atc atc tac agc ttg aga aac aag gac gtg 972
 Thr Pro Met Leu Asn Pro Ile Ile Tyr Ser Leu Arg Asn Lys Asp Val
 290 295 300
 agg gct gct gtg agg aac ctg gtg ggc cag aaa cac cta act gag tga 1020
 Arg Ala Ala Val Arg Asn Leu Val Gly Gln Lys His Leu Thr Glu
 305 310 315
 ctgtcacagt gcagaacttc caacctcttc attgtgtttg tgagggaaga gtggtgcaat 1080
 gaagaggagc cacttcccca aggtccaagt aatgaactca gaactaagac tataaacaaa 1140
 ctatcaacgt tccttaagca ccaatgcttc tagttaacag gctggaagga caagccttta 1200
 cacctttgga gagaatggct ggttgtcagc tttgtgttca accttagtgg cgtcgtagaa 1260
 ctactctttc atgaccagag gctggcacag atctctggaa agatgctgac atgcataact 1320
 aggagacaga tgcaaagcct gggt 1344

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 <400> 26

 Met Asp Arg Ser Asn Glu Thr Ala Pro Leu Ser Gly Phe Ile Leu Leu
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Gly Leu Ser Ala His Pro Lys Leu Glu Lys Thr Phe Phe Val Leu Ile
 20 25 30

Leu Met Met Tyr Leu Val Ile Leu Leu Gly Asn Gly Val Leu Ile Leu
 35 40 45

Val Ser Ile Leu Asp Ser His Leu His Thr Pro Met Tyr Phe Phe Leu
 50 55 60

Gly Asn Leu Ser Phe Leu Asp Ile Cys Tyr Thr Thr Ser Ser Val Pro
 65 70 75 80

Leu Ile Leu Asp Ser Phe Leu Thr Pro Arg Lys Thr Ile Ser Phe Ser
 85 90 95

Gly Cys Ala Val Gln Met Phe Leu Ser Phe Ala Met Gly Ala Thr Glu
 100 105 110

Cys Val Leu Leu Ser Met Met Ala Phe Asp Arg Tyr Val Ala Ile Cys
 115 120 125

Asn Pro Leu Arg Tyr Pro Val Val Met Asn Lys Ala Ala Tyr Val Pro
 130 135 140

Met Ala Ala Ser Ser Trp Ala Gly Gly Ile Thr Asn Ser Val Val Gln
 145 150 155 160

Thr Ser Leu Ala Met Arg Leu Pro Phe Cys Gly Asp Asn Val Ile Asn
165 170 175

His Phe Thr Cys Glu Ile Leu Ala Val Leu Lys Leu Ala Cys Ala Asp
180 185 190

Ile Ser Ile Asn Val Ile Ser Met Val Val Ala Asn Met Ile Phe Leu
195 200 205

Ala Val Pro Val Leu Phe Ile Phe Val Ser Tyr Val Phe Ile Leu Val
210 215 220

Thr Ile Leu Arg Ile Pro Ser Ala Glu Gly Arg Lys Lys Ala Phe Ser
225 230 235 240

Thr Cys Ser Ala His Leu Thr Val Val Leu Val Phe Tyr Gly Thr Ile
245 250 255

Leu Phe Met Tyr Gly Lys Pro Lys Ser Lys Asp Pro Leu Gly Ala Asp
260 265 270

Lys Gln Asp Leu Ala Asp Lys Leu Ile Ser Leu Phe Tyr Gly Val Val
275 280 285

Thr Pro Met Leu Asn Pro Ile Ile Tyr Ser Leu Arg Asn Lys Asp Val
 290 295 300

Arg Ala Ala Val Arg Asn Leu Val Gly Gln Lys His Leu Thr Glu
 305 310 315

<210> 27

<211> 942

<212> DNA

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<308> AF102523

<309> 1999-02-08

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<222> (1)..(942)

<400> 27

atg gcg aac agc act act gtt act gag ttt att ttg ctg ggg ctg tca 48
 Met Ala Asn Ser Thr Thr Val Thr Glu Phe Ile Leu Leu Gly Leu Ser
 1 5 10 15

gat gcc tgt gag ctg cag gtg ctc ata ttc ctg ggc ttt ctc ctg acc 96
 Asp Ala Cys Glu Leu Gln Val Leu Ile Phe Leu Gly Phe Leu Leu Thr
 20 25 30

tac ttc ctc att ctg ctg gga aac ttc ctc atc atc ttc atc acc ctt 144
 Tyr Phe Leu Ile Leu Leu Gly Asn Phe Leu Ile Ile Phe Ile Thr Leu

35	40	45	
gtg gac agg cgc ctt tac acc ccc atg tat tac ttc ctc cgc aac ttt	192		
Val Asp Arg Arg Leu Tyr Thr Pro Met Tyr Tyr Phe Leu Arg Asn Phe			
50	55	60	
gcc atg ctg gag atc tgg ttc acc tct gtc atc ttc ccc aag atg cta	240		
Ala Met Leu Glu Ile Trp Phe Thr Ser Val Ile Phe Pro Lys Met Leu			
65	70	75	80
acc aac atc atc aca gga cat aag acc atc tcc cta cta ggt tgt ttc	288		
Thr Asn Ile Ile Thr Gly His Lys Thr Ile Ser Leu Leu Gly Cys Phe			
85	90	95	
ctc caa gca ttc ctc tat ttc ttc ctt ggc acc act gag ttc ttt cta	336		
Leu Gln Ala Phe Leu Tyr Phe Phe Leu Gly Thr Thr Glu Phe Phe Leu			
100	105	110	
ctg gca gtg atg tcc ttt gac agg tat gtg gcc att tgt aac cct ttg	384		
Leu Ala Val Met Ser Phe Asp Arg Tyr Val Ala Ile Cys Asn Pro Leu			
115	120	125	
cgt tat gcc acc att atg agc aaa aga gtc tgt gtc cag ctt gtg ttt	432		
Arg Tyr Ala Thr Ile Met Ser Lys Arg Val Cys Val Gln Leu Val Phe			
130	135	140	
tgc tca tgg atg tct gga ttg ctt ctc atc ata gtt cct agt tca att	480		
Cys Ser Trp Met Ser Gly Leu Leu Leu Ile Ile Val Pro Ser Ser Ile			
145	150	155	160
gta ttt cag cag cca ttc tgt ggc cca aac atc att aat cat ttc ttc	528		
Val Phe Gln Gln Pro Phe Cys Gly Pro Asn Ile Ile Asn His Phe Phe			
165	170	175	

tgt gac aac ttt cca ctt atg gaa ctc ata tgt gca gat act agc ctg	576
Cys Asp Asn Phe Pro Leu Met Glu Leu Ile Cys Ala Asp Thr Ser Leu	
180 185 190	
gta gag ttc ctg ggt ttt gtt att gcc aat ttc agc ctc ctg ggc act	624
Val Glu Phe Leu Gly Phe Val Ile Ala Asn Phe Ser Leu Leu Gly Thr	
195 200 205	
ctg gct gtg act gcc acc tgc tat ggc cac att ctc tat acc att cta	672
Leu Ala Val Thr Ala Thr Cys Tyr Gly His Ile Leu Tyr Thr Ile Leu	
210 215 220	
cac att cct tca gcc aag gag agg aag aaa gcc ttc tca act tgc tcc	720
His Ile Pro Ser Ala Lys Glu Arg Lys Lys Ala Phe Ser Thr Cys Ser	
225 230 235 240	
tct cat att att gtg gtg tct ctc ttc tac ggc agc tgt atc ttc atg	768
Ser His Ile Ile Val Val Ser Leu Phe Tyr Gly Ser Cys Ile Phe Met	
245 250 255	
tat gtc cgg tct ggc aag aat gga cag ggg gag gat cat aac aag gtg	816
Tyr Val Arg Ser Gly Lys Asn Gly Gln Gly Glu Asp His Asn Lys Val	
260 265 270	
gtg gca ttg ctc aac act gta gtg aca ccc aca ctc aac ccc ttc atc	864
Val Ala Leu Leu Asn Thr Val Val Thr Pro Thr Leu Asn Pro Phe Ile	
275 280 285	
tac act ctg agg aac aag cag gtg aag cag gta ttt agg gaa cac gta	912
Tyr Thr Leu Arg Asn Lys Gln Val Lys Gln Val Phe Arg Glu His Val	
290 295 300	
agc aag ttc caa aag ttc agc cag acg tga	942
Ser Lys Phe Gln Lys Phe Ser Gln Thr	

305 310

<210> 28

<211> 313

<212> PRT

<213> Mus musculus

<400> 28

Met Ala Asn Ser Thr Thr Val Thr Glu Phe Ile Leu Leu Gly Leu Ser

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Asp Ala Cys Glu Leu Gln Val Leu Ile Phe Leu Gly Phe Leu Leu Thr

20 25 30

Tyr Phe Leu Ile Leu Leu Gly Asn Phe Leu Ile Ile Phe Ile Thr Leu

35 40 45

Val Asp Arg Arg Leu Tyr Thr Pro Met Tyr Tyr Phe Leu Arg Asn Phe

50 55 60

Ala Met Leu Glu Ile Trp Phe Thr Ser Val Ile Phe Pro Lys Met Leu

65 70 75 80

Thr Asn Ile Ile Thr Gly His Lys Thr Ile Ser Leu Leu Gly Cys Phe

85 90 95

Leu Gln Ala Phe Leu Tyr Phe Phe Leu Gly Thr Thr Glu Phe Phe Leu
100 105 110

Leu Ala Val Met Ser Phe Asp Arg Tyr Val Ala Ile Cys Asn Pro Leu
115 120 125

Arg Tyr Ala Thr Ile Met Ser Lys Arg Val Cys Val Gln Leu Val Phe
130 135 140

Cys Ser Trp Met Ser Gly Leu Leu Leu Ile Ile Val Pro Ser Ser Ile
145 150 155 160

Val Phe Gln Gln Pro Phe Cys Gly Pro Asn Ile Ile Asn His Phe Phe
165 170 175

Cys Asp Asn Phe Pro Leu Met Glu Leu Ile Cys Ala Asp Thr Ser Leu
180 185 190

Val Glu Phe Leu Gly Phe Val Ile Ala Asn Phe Ser Leu Leu Gly Thr
195 200 205

Leu Ala Val Thr Ala Thr Cys Tyr Gly His Ile Leu Tyr Thr Ile Leu
210 215 220

His Ile Pro Ser Ala Lys Glu Arg Lys Lys Ala Phe Ser Thr Cys Ser
225 230 235 240

Ser His Ile Ile Val Val Ser Leu Phe Tyr Gly Ser Cys Ile Phe Met
245 250 255

Tyr Val Arg Ser Gly Lys Asn Gly Gln Gly Glu Asp His Asn Lys Val
260 265 270

Val Ala Leu Leu Asn Thr Val Val Thr Pro Thr Leu Asn Pro Phe Ile
275 280 285

Tyr Thr Leu Arg Asn Lys Gln Val Lys Gln Val Phe Arg Glu His Val
290 295 300

Ser Lys Phe Gln Lys Phe Ser Gln Thr
305 310

<210> 29

<211> 669

<212> DNA

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<308> AF102531

<309> 1999-02-08

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<222> (1)..(669)

<400> 29

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Cys Asn Leu Ala Thr Met Asp Ile Ile Cys Thr Ser Ser Val Leu Pro	
1 5 10 15	

aag gcg ctg gtt ggt cta ctg tct gag gaa aac acc acc tcc ttc aaa	96
Lys Ala Leu Val Gly Leu Leu Ser Glu Glu Asn Thr Thr Ser Phe Lys	
20 25 30	

ggg tgc atg act cag ctc ttc ttt ctt gtg tgg tct gga tcc tct gag	144
Gly Cys Met Thr Gln Leu Phe Phe Leu Val Trp Ser Gly Ser Ser Glu	
35 40 45	

ctg ctg ctg ctc aca gtc atg gcc tat gac cgc tat gtg gcc atc tgt	192
Leu Leu Leu Leu Thr Val Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys	
50 55 60	

ttg ccc ctg cat tac agc tct agg atg agt cca cag ctc tgt ggg acc	240
Leu Pro Leu His Tyr Ser Ser Arg Met Ser Pro Gln Leu Cys Gly Thr	
65 70 75 80	

ttt gcc gtg ggt gta tgg tcc atc tgc gca cta aat gca tct atc aac	288
Phe Ala Val Gly Val Trp Ser Ile Cys Ala Leu Asn Ala Ser Ile Asn	
85 90 95	

act ggt ctg atg aca cgg ctg tca ttc tgt ggc ccc aag gtc atc acc	336
Thr Gly Leu Met Thr Arg Leu Ser Phe Cys Gly Pro Lys Val Ile Thr	
100 105 110	

cac ttc ttc tgt gag att ccc cca ctc ctc ctg ctc tcc tgt agt cct	384
His Phe Phe Cys Glu Ile Pro Pro Leu Leu Leu Leu Ser Cys Ser Pro	

115	120	125	
aca tat ata aat agc gtt atg act ctt gtg gca gat gcc ttt tat gga			432
Thr Tyr Ile Asn Ser Val Met Thr Leu Val Ala Asp Ala Phe Tyr Gly			
130	135	140	
ggc atc aat ttt tta ctt acc ttg cta tcc tat ggc tgc atc att gcc			480
Gly Ile Asn Phe Leu Leu Thr Leu Leu Ser Tyr Gly Cys Ile Ile Ala			
145	150	155	160
agc atc ctg cgc atg cgt tct gct gag ggc aag agg aag gcc ttt tct			528
Ser Ile Leu Arg Met Arg Ser Ala Glu Gly Lys Arg Lys Ala Phe Ser			
165	170	175	
acc tgc tca tcc cac ctc att gtg gtc tct gtg tac tac tca tct gtg			576
Thr Cys Ser Ser His Leu Ile Val Val Ser Val Tyr Tyr Ser Ser Val			
180	185	190	
ttc tgt gcc tat gtc agc cct gct tct agc tac agc cca gaa aga agc			624
Phe Cys Ala Tyr Val Ser Pro Ala Ser Ser Tyr Ser Pro Glu Arg Ser			
195	200	205	
aaa gtt tcc tca gtg ctg tac tca gtc ctc agc cca acc ctc aac			669
Lys Val Ser Ser Val Leu Tyr Ser Val Leu Ser Pro Thr Leu Asn			
210	215	220	
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<211> 223			
<212> PRT			
<213> Mus musculus			
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Cys Asn Leu Ala Thr Met Asp Ile Ile Cys Thr Ser Ser Val Leu Pro
 1 5 10 15

Lys Ala Leu Val Gly Leu Leu Ser Glu Glu Asn Thr Thr Ser Phe Lys
 20 25 30

Gly Cys Met Thr Gln Leu Phe Phe Leu Val Trp Ser Gly Ser Ser Glu
 35 40 45

Leu Leu Leu Leu Thr Val Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys
 50 55 60

Leu Pro Leu His Tyr Ser Ser Arg Met Ser Pro Gln Leu Cys Gly Thr
 65 70 75 80

Phe Ala Val Gly Val Trp Ser Ile Cys Ala Leu Asn Ala Ser Ile Asn
 85 90 95

Thr Gly Leu Met Thr Arg Leu Ser Phe Cys Gly Pro Lys Val Ile Thr
 100 105 110

His Phe Phe Cys Glu Ile Pro Pro Leu Leu Leu Leu Ser Cys Ser Pro
 115 120 125

Thr Tyr Ile Asn Ser Val Met Thr Leu Val Ala Asp Ala Phe Tyr Gly
 130 135 140

Gly Ile Asn Phe Leu Leu Thr Leu Leu Ser Tyr Gly Cys Ile Ile Ala
145 150 155 160

Ser Ile Leu Arg Met Arg Ser Ala Glu Gly Lys Arg Lys Ala Phe Ser
 165 170 175

Thr Cys Ser Ser His Leu Ile Val Val Ser Val Tyr Tyr Ser Ser Val
 180 185 190

Phe Cys Ala Tyr Val Ser Pro Ala Ser Ser Tyr Ser Pro Glu Arg Ser
 195 200 205

Lys Val Ser Ser Val Leu Tyr Ser Val Leu Ser Pro Thr Leu Asn
 210 215 220

<210> 31

<211> 1661

<212> DNA

<213> Mus musculus

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<308> AF121974

<309> 1999-04-25

<313> (1)..(1661)

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<221> misc_feature

<222> (3)..(3)

<223> n is a, c, g, or t

<220>

<221> CDS

<222> (303)..(1307)

<400> 31

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caaaaaaaaa aaaaaaaaaa agaattcatt aatgaaaaag aagggggaaa atggagggcc 120

atggaaagta gctacttcta acatacaact cttcatttcc tccatagaaa tgctgtagtt 180

aatgtctaca ccagtcag cctggtgagg ctggggcagg tcctagcagg gcctttcagg 240

gactgaaccc cggcatcctg cccctcccct ctccctggag cctccccaag ccctcaggcg 300

tc atg tca ggg tgg agc aat ggc acc tac aat gag tcc tac acc agc 347

Met Ser Gly Trp Ser Asn Gly Thr Tyr Asn Glu Ser Tyr Thr Ser

1 5 10 15

ttc ctc ctc atg ggc ttc cca ggg atg cag gaa gcc aga gcc ctc ctg 395

Phe Leu Leu Met Gly Phe Pro Gly Met Gln Glu Ala Arg Ala Leu Leu

20 25 30

gtg ctg ccc ttc ctc agc ctc tac ctg gtg atc ctc ttc acc aat gcc 443

Val Leu Pro Phe Leu Ser Leu Tyr Leu Val Ile Leu Phe Thr Asn Ala

35 40 45

ctg gtc atc cac acg gtg gca tcc cag cgc agc ctg cac cag ccc atg 491

Leu Val Ile His Thr Val Ala Ser Gln Arg Ser Leu His Gln Pro Met

50 55 60

tac ctg ctc att gcc ctg ctc ctg gct gtc aat atc tgc gct gcc acc	539
Tyr Leu Leu Ile Ala Leu Leu Leu Ala Val Asn Ile Cys Ala Ala Thr	
65 70 75	
acc gtg gtg ccc ccc atg ctc ttc agc ttc tcc aca cgc ttc aac cgc	587
Thr Val Val Pro Pro Met Leu Phe Ser Phe Ser Thr Arg Phe Asn Arg	
80 85 90 95	
atc tcc ctc cct cga tgc ttg gga caa atg ttc tgc atc tac ttc ctt	635
Ile Ser Leu Pro Arg Cys Leu Gly Gln Met Phe Cys Ile Tyr Phe Leu	
100 105 110	
att gtc ttt gac tgc aac atc ctc ctg gtc atg gct cta gat cgc tat	683
Ile Val Phe Asp Cys Asn Ile Leu Leu Val Met Ala Leu Asp Arg Tyr	
115 120 125	
gtg gct atc tgc tac cct ctc cgc tac cca gaa ata gtg aca gga cag	731
Val Ala Ile Cys Tyr Pro Leu Arg Tyr Pro Glu Ile Val Thr Gly Gln	
130 135 140	
tta ctg gct ggt ctg gtg gtg ctg gca gtc acc agg agc aca agc att	779
Leu Leu Ala Gly Leu Val Val Leu Ala Val Thr Arg Ser Thr Ser Ile	
145 150 155	
gtt gct cca gtg gtg gtg ctg gcc tcg cgg gtt cgc ttc tgt cgc tca	827
Val Ala Pro Val Val Val Leu Ala Ser Arg Val Arg Phe Cys Arg Ser	
160 165 170 175	
gat gtg atc cgc cac ttt gcc tgt gag cac atg gcc ctg atg aag ctt	875
Asp Val Ile Arg His Phe Ala Cys Glu His Met Ala Leu Met Lys Leu	
180 185 190	
tcc tgt ggg gac atc tcg ctg aat aag acg gtg gga ctc act gtt cgc	923

Ser Cys Gly Asp Ile Ser Leu Asn Lys Thr Val Gly Leu Thr Val Arg	
195 200 205	
atc ttc aac cga gtc ctg gat atg ctc ctg tta ggt gcc tcc tac tcc	971
Ile Phe Asn Arg Val Leu Asp Met Leu Leu Leu Gly Ala Ser Tyr Ser	
210 215 220	
cgc atc atc cat gct gcc ttc agg atc tca tca ggt gga gca cgg tcc	1019
Arg Ile Ile His Ala Ala Phe Arg Ile Ser Ser Gly Gly Ala Arg Ser	
225 230 235	
aaa gcc ctg aac acc tgt ggc tcc cac ctg ctg gtc atc ttc acc gtc	1067
Lys Ala Leu Asn Thr Cys Gly Ser His Leu Leu Val Ile Phe Thr Val	
240 245 250 255	
tac tcc tcc acc atg tcc tca tcc att gtc tac cgt gtg gca cgc act	1115
Tyr Ser Ser Thr Met Ser Ser Ser Ile Val Tyr Arg Val Ala Arg Thr	
260 265 270	
gcc tcc caa gat gtg cac aac ttg ctt agt gct ttc tat ctg ttg ctc	1163
Ala Ser Gln Asp Val His Asn Leu Leu Ser Ala Phe Tyr Leu Leu Leu	
275 280 285	
ccc tgt ctg gtc aac ccc atc atc tac ggg gcc aga acc aag gaa atc	1211
Pro Cys Leu Val Asn Pro Ile Ile Tyr Gly Ala Arg Thr Lys Glu Ile	
290 295 300	
agg cag cac ctg gta gct ctg ttc caa agg act cag caa cag gtc ttc	1259
Arg Gln His Leu Val Ala Leu Phe Gln Arg Thr Gln Gln Gln Val Phe	
305 310 315	
act gag aag ccc cag tcc ctg ccc tcg aat aga gag ctt cct gga tga	1307
Thr Glu Lys Pro Gln Ser Leu Pro Ser Asn Arg Glu Leu Pro Gly	
320 325 330	

ttgtccagaa tttgtgggtc tcaaaatcac tticactatt cagtgaagga ggggcattca 1367

agtgggcatt cgtctctggt atattttgtc tcggctatatt tagttcagca tcctatttat 1427

gagaagggtc tattctatat ctccagctgt ctagaactcc ttaagtggcc caggatgacc 1487

tggaacccaa acaattctcc tttcttagtt tgccaaatgc tagcattaga ggcattgagtc 1547

acagtgcctg gcttatctgc actcatactg gagagcctca tgtctgcttt ccaaaaagca 1607

cctactcact ctgaactagc aactgaaagc aagctctaac cctggcttga agtt 1661

<210> 32

<211> 334

<212> PRT

<213> Mus musculus

<400> 32

Met Ser Gly Trp Ser Asn Gly Thr Tyr Asn Glu Ser Tyr Thr Ser Phe
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Leu Leu Met Gly Phe Pro Gly Met Gln Glu Ala Arg Ala Leu Leu Val
20 25 30

Leu Pro Phe Leu Ser Leu Tyr Leu Val Ile Leu Phe Thr Asn Ala Leu
35 40 45

Val Ile His Thr Val Ala Ser Gln Arg Ser Leu His Gln Pro Met Tyr

50

55

60

Leu Leu Ile Ala Leu Leu Leu Ala Val Asn Ile Cys Ala Ala Thr Thr
65 70 75 80

Val Val Pro Pro Met Leu Phe Ser Phe Ser Thr Arg Phe Asn Arg Ile
85 90 95

Ser Leu Pro Arg Cys Leu Gly Gln Met Phe Cys Ile Tyr Phe Leu Ile
100 105 110

Val Phe Asp Cys Asn Ile Leu Leu Val Met Ala Leu Asp Arg Tyr Val
115 120 125

Ala Ile Cys Tyr Pro Leu Arg Tyr Pro Glu Ile Val Thr Gly Gln Leu
130 135 140

Leu Ala Gly Leu Val Val Leu Ala Val Thr Arg Ser Thr Ser Ile Val
145 150 155 160

Ala Pro Val Val Val Leu Ala Ser Arg Val Arg Phe Cys Arg Ser Asp
165 170 175

Val Ile Arg His Phe Ala Cys Glu His Met Ala Leu Met Lys Leu Ser
180 185 190

Cys Gly Asp Ile Ser Leu Asn Lys Thr Val Gly Leu Thr Val Arg Ile
195 200 205

Phe Asn Arg Val Leu Asp Met Leu Leu Leu Gly Ala Ser Tyr Ser Arg
210 215 220

Ile Ile His Ala Ala Phe Arg Ile Ser Ser Gly Gly Ala Arg Ser Lys
225 230 235 240

Ala Leu Asn Thr Cys Gly Ser His Leu Leu Val Ile Phe Thr Val Tyr
245 250 255

Ser Ser Thr Met Ser Ser Ser Ile Val Tyr Arg Val Ala Arg Thr Ala
260 265 270

Ser Gln Asp Val His Asn Leu Leu Ser Ala Phe Tyr Leu Leu Leu Pro
275 280 285

Cys Leu Val Asn Pro Ile Ile Tyr Gly Ala Arg Thr Lys Glu Ile Arg
290 295 300

Gln His Leu Val Ala Leu Phe Gln Arg Thr Gln Gln Gln Val Phe Thr
305 310 315 320

Glu Lys Pro Gln Ser Leu Pro Ser Asn Arg Glu Leu Pro Gly

325

330

<210> 33

<211> 1116

<212> DNA

<213> *Mus musculus*

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<308> AF121975

<309> 1999-04-25

<313> (1)..(1116)

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<221> misc_feature

<222> (15)..(15)

<223> n is a, c, g, or t

<220>

<221> CDS

<222> (50)..(1015)

<400> 33

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Met Asn Ser

1

aaa gca agc atg ctt gga act aac ttc act atc atc cat cca act gtg 106

Lys Ala Ser Met Leu Gly Thr Asn Phe Thr Ile Ile His Pro Thr Val

5

10

15

ttc atc ctg ctt gga atc cca ggg ctg gag cag tac cac acc tgg ctt 154

Phe Ile Leu Leu Gly Ile Pro Gly Leu Glu Gln Tyr His Thr Trp Leu

20	25	30	35	
tct att cct ttt tgt ctt atg tac att gct gca gtc ttg ggg aac gga	202			
Ser Ile Pro Phe Cys Leu Met Tyr Ile Ala Ala Val Leu Gly Asn Gly				
40	45	50		
gcc ctc atc ctt gtt gtc ctg agt gaa cgc acc ctc cat gag ccc atg	250			
Ala Leu Ile Leu Val Val Leu Ser Glu Arg Thr Leu His Glu Pro Met				
55	60	65		
tat gtc ttt ctg tcc atg ctg gct ggc act gat att ctc ctg tca acc	298			
Tyr Val Phe Leu Ser Met Leu Ala Gly Thr Asp Ile Leu Leu Ser Thr				
70	75	80		
acc act gtg cct aag acc ttg gct atc ttt tgg ttc cat gct ggg gag	346			
Thr Thr Val Pro Lys Thr Leu Ala Ile Phe Trp Phe His Ala Gly Glu				
85	90	95		
atc ccc ttt gat gcc tgc att gct cag atg ttt ttc atc cac gtt gct	394			
Ile Pro Phe Asp Ala Cys Ile Ala Gln Met Phe Phe Ile His Val Ala				
100	105	110	115	
ttt gtg gct gag tcg gga atc ctt ctg gcc atg gca ttt gac cga tat	442			
Phe Val Ala Glu Ser Gly Ile Leu Leu Ala Met Ala Phe Asp Arg Tyr				
120	125	130		
gtg gct att tgt act cct ctg aga tac tca gcc gtc tta aca cct atg	490			
Val Ala Ile Cys Thr Pro Leu Arg Tyr Ser Ala Val Leu Thr Pro Met				
135	140	145		
gca att gga aaa atg acc ctg gcc atc tgg gga cgg agc att ggg aca	538			
Ala Ile Gly Lys Met Thr Leu Ala Ile Trp Gly Arg Ser Ile Gly Thr				
150	155	160		

att ttc cct atc ata ttt ctg ctg aag agg ctg tca tac tgc agg acc	586
Ile Phe Pro Ile Ile Phe Leu Leu Lys Arg Leu Ser Tyr Cys Arg Thr	
165 170 175	
aat gtc atc cca cac tca tat tgt gag cat att ggt gta gcc aga ttg	634
Asn Val Ile Pro His Ser Tyr Cys Glu His Ile Gly Val Ala Arg Leu	
180 185 190 195	
gct tgt gct gac atc act gtc aat atc tgg tat ggc ttc tcg gtg cca	682
Ala Cys Ala Asp Ile Thr Val Asn Ile Trp Tyr Gly Phe Ser Val Pro	
200 205 210	
atg gct tca gtt ttg gta gat gtt gca ctc att ggt att tct tat acg	730
Met Ala Ser Val Leu Val Asp Val Ala Leu Ile Gly Ile Ser Tyr Thr	
215 220 225	
ttg atc ctc cag gct gtg ttt aga ctt cct tcc cag gat gct agg cac	778
Leu Ile Leu Gln Ala Val Phe Arg Leu Pro Ser Gln Asp Ala Arg His	
230 235 240	
aag gcc ctc aat acc tgt ggt tct cac att ggg gtc att ctc ctc ttt	826
Lys Ala Leu Asn Thr Cys Gly Ser His Ile Gly Val Ile Leu Leu Phe	
245 250 255	
ttc ata cca tca ttt ttt act ttc ctt act cat cgc ttt ggc aag aac	874
Phe Ile Pro Ser Phe Phe Thr Phe Leu Thr His Arg Phe Gly Lys Asn	
260 265 270 275	
atc ccc cac cat gtg cac att ctt ctg gca aat ctc tat gtg ttg gtt	922
Ile Pro His His Val His Ile Leu Leu Ala Asn Leu Tyr Val Leu Val	
280 285 290	
ccc ccc atg ctt aac cct atc atc tat ggt gct aag acc aag caa att	970
Pro Pro Met Leu Asn Pro Ile Ile Tyr Gly Ala Lys Thr Lys Gln Ile	

295 300 305
 agg gac agc atg act cgc atg ttg tct gtt gtg tgg aag tct tga 1015
 Arg Asp Ser Met Thr Arg Met Leu Ser Val Val Trp Lys Ser
 310 315 320
 gagcagtcac agttcacaaa gctgtcttag tttctcttac aaacaggaga gagagagaga 1075
 gagagagaga gagagagaga gagagagaga gagagagaga g 1116

 <210> 34
 <211> 321
 <212> PRT
 <213> Mus musculus

 <400> 34

 Met Asn Ser Lys Ala Ser Met Leu Gly Thr Asn Phe Thr Ile Ile His
 1 5 10 15

 Pro Thr Val Phe Ile Leu Leu Gly Ile Pro Gly Leu Glu Gln Tyr His
 20 25 30

 Thr Trp Leu Ser Ile Pro Phe Cys Leu Met Tyr Ile Ala Ala Val Leu
 35 40 45

 Gly Asn Gly Ala Leu Ile Leu Val Val Leu Ser Glu Arg Thr Leu His
 50 55 60

Glu Pro Met Tyr Val Phe Leu Ser Met Leu Ala Gly Thr Asp Ile Leu
 65 70 75 80

Leu Ser Thr Thr Thr Val Pro Lys Thr Leu Ala Ile Phe Trp Phe His
 85 90 95

Ala Gly Glu Ile Pro Phe Asp Ala Cys Ile Ala Gln Met Phe Phe Ile
 100 105 110

His Val Ala Phe Val Ala Glu Ser Gly Ile Leu Leu Ala Met Ala Phe
 115 120 125

Asp Arg Tyr Val Ala Ile Cys Thr Pro Leu Arg Tyr Ser Ala Val Leu
 130 135 140

Thr Pro Met Ala Ile Gly Lys Met Thr Leu Ala Ile Trp Gly Arg Ser
 145 150 155 160

Ile Gly Thr Ile Phe Pro Ile Ile Phe Leu Leu Lys Arg Leu Ser Tyr
 165 170 175

Cys Arg Thr Asn Val Ile Pro His Ser Tyr Cys Glu His Ile Gly Val
 180 185 190

Ala Arg Leu Ala Cys Ala Asp Ile Thr Val Asn Ile Trp Tyr Gly Phe
 195 200 205

Ser Val Pro Met Ala Ser Val Leu Val Asp Val Ala Leu Ile Gly Ile
210 215 220

Ser Tyr Thr Leu Ile Leu Gln Ala Val Phe Arg Leu Pro Ser Gln Asp
225 230 235 240

Ala Arg His Lys Ala Leu Asn Thr Cys Gly Ser His Ile Gly Val Ile
245 250 255

Leu Leu Phe Phe Ile Pro Ser Phe Phe Thr Phe Leu Thr His Arg Phe
260 265 270

Gly Lys Asn Ile Pro His His Val His Ile Leu Leu Ala Asn Leu Tyr
275 280 285

Val Leu Val Pro Pro Met Leu Asn Pro Ile Ile Tyr Gly Ala Lys Thr
290 295 300

Lys Gln Ile Arg Asp Ser Met Thr Arg Met Leu Ser Val Val Trp Lys
305 310 315 320

Ser

<210> 35
 <211> 1267
 <212> DNA
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 <308> AF121977
 <309> 1999-04-25
 <313> (1)..(1267)

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 <222> (108)..(108)
 <223> n is a, c, g, or t

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 <222> (172)..(1200)

<400> 35
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 ctttcatgag gtaccacaca acagcatgtt cctgtacaca tgtaactacc t atg ttt 177
 Met Phe
 1
 tgt cat tta tat aat gag aac aat atg caa gtg gca atc ctg gat tcc 225
 Cys His Leu Tyr Asn Glu Asn Asn Met Gln Val Ala Ile Leu Asp Ser
 5 10 15
 att cta ata cct tct tat ttt tct ttc ctg aca gag atg gag cct gga 273

•

tca aca cag atg tcc tcc aca gtc tgc atc ctc cta gtt gga act tcc	705
Ser Thr Gln Met Ser Ser Thr Val Cys Ile Leu Leu Val Gly Thr Ser	
165 170 175	
tac cta ggt gga tgg gtg aat gct tgg ata ttt act ggt tgc tcc tta	753
Tyr Leu Gly Gly Trp Val Asn Ala Trp Ile Phe Thr Gly Cys Ser Leu	
180 185 190	
aat ctg tca ttt tgt ggg cca aat aaa att aat cac ttt ttc tgt gac	801
Asn Leu Ser Phe Cys Gly Pro Asn Lys Ile Asn His Phe Phe Cys Asp	
195 200 205 210	
tat tca cca cta ttg aag ctt tct tgt tct cat gac ttt tct ttt gaa	849
Tyr Ser Pro Leu Leu Lys Leu Ser Cys Ser His Asp Phe Ser Phe Glu	
215 220 225	
gtc att cca gca atc tct tcg gga tcc atc att gtg gtc act gtg ttt	897
Val Ile Pro Ala Ile Ser Ser Gly Ser Ile Ile Val Val Thr Val Phe	
230 235 240	
atc att gct ctg tct tat gtc tac atc ctt gtg tca atc ctg aag atg	945
Ile Ile Ala Leu Ser Tyr Val Tyr Ile Leu Val Ser Ile Leu Lys Met	
245 250 255	
cgc tct act gaa ggt cgc cag aag gcc ttc tcc acc tgc act tcc cac	993
Arg Ser Thr Glu Gly Arg Gln Lys Ala Phe Ser Thr Cys Thr Ser His	
260 265 270	
ctc act gca gtc act ctg ttc ttt ggg acc atc aca ttc att tat gtg	1041
Leu Thr Ala Val Thr Leu Phe Phe Gly Thr Ile Thr Phe Ile Tyr Val	
275 280 285 290	
atg ccc cag tcc agc tac tcc aca gac cag aac aaa gtg gtg tct gtg	1089

Met Pro Gln Ser Ser Tyr Ser Thr Asp Gln Asn Lys Val Val Ser Val
 295 300 305

ttt tac aca gtg gtg atc ccc atg ttg aat ccc ctc atc tac agt ttc 1137
 Phe Tyr Thr Val Val Ile Pro Met Leu Asn Pro Leu Ile Tyr Ser Phe
 310 315 320

aga aac aaa gag gtt aaa gaa gcc atg aaa aaa ctg att gct aaa aca 1185
 Arg Asn Lys Glu Val Lys Glu Ala Met Lys Lys Leu Ile Ala Lys Thr
 325 330 335

cat tgg tgg tcc tga aatatttgaa ttacaaaaca gtaaattctg ctcttacagg 1240
 His Trp Trp Ser
 340

taaatggcag tataactaagt aaattac 1267

<210> 36

<211> 342

<212> PRT

<213> Mus musculus

<400> 36

Met Phe Cys His Leu Tyr Asn Glu Asn Asn Met Gln Val Ala Ile Leu
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Asp Ser Ile Leu Ile Pro Ser Tyr Phe Ser Phe Leu Thr Glu Met Glu
 20 25 30

Pro Gly Asn Tyr Thr Val Val Thr Glu Phe Ile Leu Leu Gly Leu Thr

35

40

45

Asp Asp Ile Thr Val Ser Val Ile Leu Phe Val Met Phe Leu Ile Val
 50 55 60

Tyr Ser Val Thr Leu Met Gly Asn Leu Asn Ile Ile Val Leu Ile Arg
 65 70 75 80

Thr Ser Pro Gln Leu His Thr Pro Met Tyr Leu Phe Leu Ser His Leu
 85 90 95

Ala Phe Leu Asp Ile Gly Tyr Ser Ser Ser Val Thr Pro Ile Met Leu
 100 105 110

Arg Gly Phe Leu Arg Lys Gly Thr Phe Ile Pro Val Ala Gly Cys Val
 115 120 125

Ala Gln Leu Cys Ile Val Val Ala Phe Gly Thr Ser Glu Ser Phe Leu
 130 135 140

Leu Ala Ser Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Ser Pro Leu
 145 150 155 160

Leu Tyr Ser Thr Gln Met Ser Ser Thr Val Cys Ile Leu Leu Val Gly
 165 170 175

Thr Ser Tyr Leu Gly Gly Trp Val Asn Ala Trp Ile Phe Thr Gly Cys
 180 185 190

Ser Leu Asn Leu Ser Phe Cys Gly Pro Asn Lys Ile Asn His Phe Phe
 195 200 205

Cys Asp Tyr Ser Pro Leu Leu Lys Leu Ser Cys Ser His Asp Phe Ser
 210 215 220

Phe Glu Val Ile Pro Ala Ile Ser Ser Gly Ser Ile Ile Val Val Thr
 225 230 235 240

Val Phe Ile Ile Ala Leu Ser Tyr Val Tyr Ile Leu Val Ser Ile Leu
 245 250 255

Lys Met Arg Ser Thr Glu Gly Arg Gln Lys Ala Phe Ser Thr Cys Thr
 260 265 270

Ser His Leu Thr Ala Val Thr Leu Phe Phe Gly Thr Ile Thr Phe Ile
 275 280 285

Tyr Val Met Pro Gln Ser Ser Tyr Ser Thr Asp Gln Asn Lys Val Val
 290 295 300

Ser Val Phe Tyr Thr Val Val Ile Pro Met Leu Asn Pro Leu Ile Tyr

305 310 315 320

Ser Phe Arg Asn Lys Glu Val Lys Glu Ala Met Lys Lys Leu Ile Ala
 325 330 335

Lys Thr His Trp Trp Ser
 340

<210> 37
<211> 1120
<212> DNA
<213> Mus musculus

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<309> 1999-04-25
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<223> n is a, c, g, or t

<220>
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<222> (1083)..(1083)

<223> n is a, c, g, or t

<400> 37

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gtccatcaga ggctcctgac aac atg tca cca ggc aac agc tca tgg att cat 113

Met Ser Pro Gly Asn Ser Ser Trp Ile His

1 5 10

cct tct tcc ttc ctg ctc ttg gga atc cca gga ctg gaa gag ttg cag 161

Pro Ser Ser Phe Leu Leu Leu Gly Ile Pro Gly Leu Glu Glu Leu Gln

15 20 25

ttc tgg ctt ggt ttg cca ttt gga aca gtc tat ctt att gct gtc cta 209

Phe Trp Leu Gly Leu Pro Phe Gly Thr Val Tyr Leu Ile Ala Val Leu

30 35 40

ggg aat gtc atc att ctc ttt gta atc tat cta gag cac agc ctt cac 257

Gly Asn Val Ile Ile Leu Phe Val Ile Tyr Leu Glu His Ser Leu His

45 50 55

caa cct atg ttc tac tta ctg gcc ata ctg gct gtt act gac ttg ggt 305

Gln Pro Met Phe Tyr Leu Leu Ala Ile Leu Ala Val Thr Asp Leu Gly

60 65 70

ctg tct aca gca act gtt ccc aga gca ctc ggt ata ttc tgg ttt ggc 353

Leu Ser Thr Ala Thr Val Pro Arg Ala Leu Gly Ile Phe Trp Phe Gly

75 80 85 90

ttc cat aag att gcc ttt agg gac tgt gta gct caa atg ttt ttc ata 401

Phe His Lys Ile Ala Phe Arg Asp Cys Val Ala Gln Met Phe Phe Ile

95 100 105

cat ctg ttt aca ggc atc gaa aca ttc atg ctt gta gct atg gcc ttt 449

His Leu Phe Thr Gly Ile Glu Thr Phe Met Leu Val Ala Met Ala Phe	
110 115 120	
gat cgc tac att gcc atc tgt aac cct ctc cga tat aac act atc ctc	497
Asp Arg Tyr Ile Ala Ile Cys Asn Pro Leu Arg Tyr Asn Thr Ile Leu	
125 130 135	
acc aac aga aca atc tgc att att gtt gga gtt gga cta ttt aaa aat	545
Thr Asn Arg Thr Ile Cys Ile Ile Val Gly Val Gly Leu Phe Lys Asn	
140 145 150	
ttc att ttg gtt ttt cca ctt ata ttt ctc att cta agg ctt tca ttc	593
Phe Ile Leu Val Phe Pro Leu Ile Phe Leu Ile Leu Arg Leu Ser Phe	
155 160 165 170	
tgt gga cac aat atc ata cca cac aca tac tgt gag cac atg ggc att	641
Cys Gly His Asn Ile Ile Pro His Thr Tyr Cys Glu His Met Gly Ile	
175 180 185	
gct cga ctg gca tgc gtc agc atc aag gtt aat gta tta ttt gga tta	689
Ala Arg Leu Ala Cys Val Ser Ile Lys Val Asn Val Leu Phe Gly Leu	
190 195 200	
ata ctc ata tct atg ata ctt ctg gat gtt gtt ttg agt gct ctg tcc	737
Ile Leu Ile Ser Met Ile Leu Leu Asp Val Val Leu Ser Ala Leu Ser	
205 210 215	
tat gcg aaa att ctt cat gct gta ttt aaa ctc cca tcc tgg gaa gcc	785
Tyr Ala Lys Ile Leu His Ala Val Phe Lys Leu Pro Ser Trp Glu Ala	
220 225 230	
aga ctc aaa gct ctt aat acc tgt ggt tcc cat gtg tgt gtg atc ttg	833
Arg Leu Lys Ala Leu Asn Thr Cys Gly Ser His Val Cys Val Ile Leu	
235 240 245 250	

gct ttc ttc act cca gcc ttt ttc tcc ttc ttg act cat cga ttt gga 881
 Ala Phe Phe Thr Pro Ala Phe Phe Ser Phe Leu Thr His Arg Phe Gly

255

260

265

cac aat att cca cga tat atc cac atc ctc ctt gct aac tta tat gtg 929
 His Asn Ile Pro Arg Tyr Ile His Ile Leu Leu Ala Asn Leu Tyr Val

270

275

280

atc att ccc cng gct ctt aac cct att att tat ggg gtg aga acc aaa 977
 Ile Ile Pro Xaa Ala Leu Asn Pro Ile Ile Tyr Gly Val Arg Thr Lys

285

290

295

cag ata caa gat cgt gcg gtg aca ata ttg tgc aac gag gtt gga cag 1025
 Gln Ile Gln Asp Arg Ala Val Thr Ile Leu Cys Asn Glu Val Gly Gln

300

305

310

ctg gca gac gac tag tatgtcttct aatagtctct ttccttccta agaggactac 1080
 Leu Ala Asp Asp
 315

tgntttgtaa gcttgcatatc gtggaacaca ttacacaatg 1120

<210> 38

<211> 318

<212> PRT

<213> Mus musculus

<220>

<221> misc_feature

<222> (286)..(286)

<223> The 'Xaa' at location 286 stands for Gln, Arg, Pro, or Leu.

<400> 38

Met Ser Pro Gly Asn Ser Ser Trp Ile His Pro Ser Ser Phe Leu Leu
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Leu Gly Ile Pro Gly Leu Glu Glu Leu Gln Phe Trp Leu Gly Leu Pro
 20 25 30

Phe Gly Thr Val Tyr Leu Ile Ala Val Leu Gly Asn Val Ile Ile Leu
 35 40 45

Phe Val Ile Tyr Leu Glu His Ser Leu His Gln Pro Met Phe Tyr Leu
 50 55 60

Leu Ala Ile Leu Ala Val Thr Asp Leu Gly Leu Ser Thr Ala Thr Val
 65 70 75 80

Pro Arg Ala Leu Gly Ile Phe Trp Phe Gly Phe His Lys Ile Ala Phe
 85 90 95

Arg Asp Cys Val Ala Gln Met Phe Phe Ile His Leu Phe Thr Gly Ile
 100 105 110

Glu Thr Phe Met Leu Val Ala Met Ala Phe Asp Arg Tyr Ile Ala Ile
 115 120 125

Cys Asn Pro Leu Arg Tyr Asn Thr Ile Leu Thr Asn Arg Thr Ile Cys
 130 135 140

Ile Ile Val Gly Val Gly Leu Phe Lys Asn Phe Ile Leu Val Phe Pro
 145 150 155 160

Leu Ile Phe Leu Ile Leu Arg Leu Ser Phe Cys Gly His Asn Ile Ile
 165 170 175

Pro His Thr Tyr Cys Glu His Met Gly Ile Ala Arg Leu Ala Cys Val
 180 185 190

Ser Ile Lys Val Asn Val Leu Phe Gly Leu Ile Leu Ile Ser Met Ile
 195 200 205

Leu Leu Asp Val Val Leu Ser Ala Leu Ser Tyr Ala Lys Ile Leu His
 210 215 220

Ala Val Phe Lys Leu Pro Ser Trp Glu Ala Arg Leu Lys Ala Leu Asn
 225 230 235 240

Thr Cys Gly Ser His Val Cys Val Ile Leu Ala Phe Phe Thr Pro Ala
 245 250 255

Phe Phe Ser Phe Leu Thr His Arg Phe Gly His Asn Ile Pro Arg Tyr
 260 265 270

Ile His Ile Leu Leu Ala Asn Leu Tyr Val Ile Ile Pro Xaa Ala Leu
 275 280 285

Asn Pro Ile Ile Tyr Gly Val Arg Thr Lys Gln Ile Gln Asp Arg Ala
 290 295 300

Val Thr Ile Leu Cys Asn Glu Val Gly Gln Leu Ala Asp Asp
 305 310 315

<210> 39

<211> 2333

<212> DNA

<213> Mus musculus

<300>

<308> M36778

<309> 1995-08-22

<313> (1)..(2333)

<220>

<221> CDS

<222> (24)..(1088)

<400> 39

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Met Gly Cys Thr Leu Ser Ala Glu Glu Arg

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gcc gcc ctc gag cgg agc aag gcg att gag aaa aac ctc aaa gaa gat 101

Ala Ala Leu Glu Arg Ser Lys Ala Ile Glu Lys Asn Leu Lys Glu Asp	
15 20 25	
ggc atc agc gcc gcc aaa gac gtg aaa tta ctc ctg ctg ggg gct gga	149
Gly Ile Ser Ala Ala Lys Asp Val Lys Leu Leu Leu Leu Gly Ala Gly	
30 35 40	
gaa tca gga aaa agc acc att gtg aag cag atg aag atc atc cat gaa	197
Glu Ser Gly Lys Ser Thr Ile Val Lys Gln Met Lys Ile Ile His Glu	
45 50 55	
gat ggc ttc tct ggg gaa gac gtg aag cag tac aag cct gtg gtc tac	245
Asp Gly Phe Ser Gly Glu Asp Val Lys Gln Tyr Lys Pro Val Val Tyr	
60 65 70	
agc aac acc atc cag tct ctg gcg gcc att gtc cgg gcc atg gac act	293
Ser Asn Thr Ile Gln Ser Leu Ala Ala Ile Val Arg Ala Met Asp Thr	
75 80 85 90	
ttg ggc gtg gag tat ggt gac aag gag agg aag acg gac tcc aag atg	341
Leu Gly Val Glu Tyr Gly Asp Lys Glu Arg Lys Thr Asp Ser Lys Met	
95 100 105	
gtg tgt gac gtg gtg agt cgt atg gaa gac act gaa ccg ttc tct gca	389
Val Cys Asp Val Val Ser Arg Met Glu Asp Thr Glu Pro Phe Ser Ala	
110 115 120	
gaa ctt ctt tct gcc atg atg cga ctc tgg ggc gac tcg ggg atc cag	437
Glu Leu Leu Ser Ala Met Met Arg Leu Trp Gly Asp Ser Gly Ile Gln	
125 130 135	
gag tgc ttc aac cga tct cgg gag tat cag ctc aat gac tct gcc aaa	485
Glu Cys Phe Asn Arg Ser Arg Glu Tyr Gln Leu Asn Asp Ser Ala Lys	
140 145 150	

tac tac ctg gac agc ctg gat cgg att gga gcc ggt gac tac cag ccc	533
Tyr Tyr Leu Asp Ser Leu Asp Arg Ile Gly Ala Gly Asp Tyr Gln Pro	
155 160 165 170	
act gag cag gac atc ctc cga acc aga gtc aaa aca act ggc atc gta	581
Thr Glu Gln Asp Ile Leu Arg Thr Arg Val Lys Thr Thr Gly Ile Val	
175 180 185	
gaa acc cac ttc acc ttc aag aac ctc cac ttc agg ctg ttt gac gtc	629
Glu Thr His Phe Thr Phe Lys Asn Leu His Phe Arg Leu Phe Asp Val	
190 195 200	
ggg ggc cag cga tct gaa cgc aag aag tgg atc cac tgc ttt gag gat	677
Gly Gly Gln Arg Ser Glu Arg Lys Lys Trp Ile His Cys Phe Glu Asp	
205 210 215	
gtc acg gcc atc atc ttc tgt gtc gca ctc agc ggc tat gac cag gtg	725
Val Thr Ala Ile Ile Phe Cys Val Ala Leu Ser Gly Tyr Asp Gln Val	
220 225 230	
ctc cac gag gac gaa acc acg aac cgc atg cac gaa tcc ctg aag ctc	773
Leu His Glu Asp Glu Thr Thr Asn Arg Met His Glu Ser Leu Lys Leu	
235 240 245 250	
ttc gac agc atc tgc aac aac aag tgg ttc aca gac aca tct att atc	821
Phe Asp Ser Ile Cys Asn Asn Lys Trp Phe Thr Asp Thr Ser Ile Ile	
255 260 265	
ctg ttt ctc aac aag aag gac ata ttt gag gag aag atc aag aag tcc	869
Leu Phe Leu Asn Lys Lys Asp Ile Phe Glu Glu Lys Ile Lys Lys Ser	
270 275 280	
cca ctc acc atc tgc ttt cct gaa tac aca ggc ccc agt gcc ttc aca	917

Pro	Leu	Thr	Ile	Cys	Phe	Pro	Glu	Tyr	Thr	Gly	Pro	Ser	Ala	Phe	Thr	
285			290			295										
gaa gct gtg gct cac atc caa ggg cag tat gag agt aag aat aag tca																965
Glu Ala Val Ala His Ile Gln Gly Gln Tyr Glu Ser Lys Asn Lys Ser																
300			305			310										
gct cac aag gaa gtc tac agc cat gtc acc tgt gcc acg gac acc aac																1013
Ala His Lys Glu Val Tyr Ser His Val Thr Cys Ala Thr Asp Thr Asn																
315			320			325			330							
aac atc caa ttc gtc ttt gat gcc gtg aca gat gtc atc atc gcc aaa																1061
Asn Ile Gln Phe Val Phe Asp Ala Val Thr Asp Val Ile Ile Ala Lys																
335			340			345										
aac cta cgg ggc tgt gga ctc tac tga gccctggcct cctacccagc																1108
Asn Leu Arg Gly Cys Gly Leu Tyr																
350																
ctgccactca ctcctcccct ggacccagag ctctgtcact gctcagatgc cctgtttaact																1168
gaagaaaacc tggaggctag ccttgggggc aggaggaggc atcctttgag catccccacc																1228
ccaccaact tcagcctcgt gacacgtggg aacagggttg ggcagaggtg tggaacagca																1288
caaggccaga gaccacggca tgccacttgg gtgctgctca ctggtcagct gtgtgtctta																1348
cacagaggcc gagtgggcaa cactgccatc tgattcagaa tgggcatgcc ctgtcctctg																1408
tacctcttgt tcagtgtcct ggtttctctt ccaccttggg gataggatgg ctggcaggaa																1468
ggcccatgg aaggtgctgc ttgattaggg gatagtcgat ggcattcttc agcagtcctc																1528
agggctctgtt tggtagaggg tggtttcgtc gacaaaagcc aacatggaat caggccactt																1588

ttggggcgca aagactcaga ctttggggac gggttccctc ctccttcact ttggatcttg 1648
 gcccctctct ggtcatcttc ccttgccctt gggctcccca ggatactcag ccctgactcc 1708
 catgggggttg ggaatattcc ttaagactgg ctgactgcaa aggtcaccga tggagaaaca 1768
 tccctgtgct acagaattgg ggggtgggaca gctgaggggg caggcggctc tttcctgata 1828
 gttgatgaca agccctgaga atgccatctg ctggctccac tcacacgggc tcaactgtcc 1888
 tgggtgatag tgacttgcca ggccacaggc tgcaggtcac agacagagca ggcaagcagc 1948
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 cagtgccttg ctttactcca gccttgggtca ggaagtcgaa agcccttggt gtattcctgg 2068
 tctcggagca aataatgagc cagcaccctg aagggtgggc tccaactcag acatgcagcc 2128
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 taagcaaaac ggcgtggtgg agctttggca accctagccc cagctaactt tggacagtca 2248
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 gacaggtttg aatgctcatg tggca 2333

<210> 40

<211> 354

<212> PRT

<213> Mus musculus

<400> 40

Met Gly Cys Thr Leu Ser Ala Glu Glu Arg Ala Ala Leu Glu Arg Ser
 1 5 10 15

Lys Ala Ile Glu Lys Asn Leu Lys Glu Asp Gly Ile Ser Ala Ala Lys
 20 25 30

Asp Val Lys Leu Leu Leu Leu Gly Ala Gly Glu Ser Gly Lys Ser Thr
 35 40 45

Ile Val Lys Gln Met Lys Ile Ile His Glu Asp Gly Phe Ser Gly Glu
 50 55 60

Asp Val Lys Gln Tyr Lys Pro Val Val Tyr Ser Asn Thr Ile Gln Ser
 65 70 75 80

Leu Ala Ala Ile Val Arg Ala Met Asp Thr Leu Gly Val Glu Tyr Gly
 85 90 95

Asp Lys Glu Arg Lys Thr Asp Ser Lys Met Val Cys Asp Val Val Ser
 100 105 110

Arg Met Glu Asp Thr Glu Pro Phe Ser Ala Glu Leu Leu Ser Ala Met
 115 120 125

Met Arg Leu Trp Gly Asp Ser Gly Ile Gln Glu Cys Phe Asn Arg Ser

130

135

140

Arg Glu Tyr Gln Leu Asn Asp Ser Ala Lys Tyr Tyr Leu Asp Ser Leu
145 150 155 160

Asp Arg Ile Gly Ala Gly Asp Tyr Gln Pro Thr Glu Gln Asp Ile Leu
165 170 175

Arg Thr Arg Val Lys Thr Thr Gly Ile Val Glu Thr His Phe Thr Phe
180 185 190

Lys Asn Leu His Phe Arg Leu Phe Asp Val Gly Gly Gln Arg Ser Glu
195 200 205

Arg Lys Lys Trp Ile His Cys Phe Glu Asp Val Thr Ala Ile Ile Phe
210 215 220

Cys Val Ala Leu Ser Gly Tyr Asp Gln Val Leu His Glu Asp Glu Thr
225 230 235 240

Thr Asn Arg Met His Glu Ser Leu Lys Leu Phe Asp Ser Ile Cys Asn
245 250 255

Asn Lys Trp Phe Thr Asp Thr Ser Ile Ile Leu Phe Leu Asn Lys Lys
260 265 270

Asp Ile Phe Glu Glu Lys Ile Lys Lys Ser Pro Leu Thr Ile Cys Phe
275 280 285

Pro Glu Tyr Thr Gly Pro Ser Ala Phe Thr Glu Ala Val Ala His Ile
290 295 300

Gln Gly Gln Tyr Glu Ser Lys Asn Lys Ser Ala His Lys Glu Val Tyr
305 310 315 320

Ser His Val Thr Cys Ala Thr Asp Thr Asn Asn Ile Gln Phe Val Phe
325 330 335

Asp Ala Val Thr Asp Val Ile Ile Ala Lys Asn Leu Arg Gly Cys Gly
340 345 350

Leu Tyr

<210> 41

<211> 1135

<212> DNA

<213> Mus musculus

<300>

<308> M87286

<309> 1993-04-27

<313> (1)..(1135)

<220>

<221> CDS

<222> (41)..(1063)

<400> 41

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Met Ser Glu Leu Glu

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Gln Leu Arg Gln Glu Ala Glu Gln Leu Arg Asn Gln Ile Gln Asp Ala

10

15

20

cgg aag gcc tgc aac gat gcc acg ctg gtt cag atc acg tct aat atg 151

Arg Lys Ala Cys Asn Asp Ala Thr Leu Val Gln Ile Thr Ser Asn Met

25

30

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Asp Ser Val Gly Arg Ile Gln Met Arg Thr Arg Arg Thr Leu Arg Gly

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cac ctc gct aag atc tac gcc atg cac tgg gga tat gat tcc agg cta 247

His Leu Ala Lys Ile Tyr Ala Met His Trp Gly Tyr Asp Ser Arg Leu

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cta gtc agt gct tcg caa gat gga aaa tta att att tgg gat agc tat 295

Leu Val Ser Ala Ser Gln Asp Gly Lys Leu Ile Ile Trp Asp Ser Tyr

70

75

80

85

acg aca aat aag atg cac gcc atc cct ctg agg tcc tcc tgg gtg atg 343

Thr Thr Asn Lys Met His Ala Ile Pro Leu Arg Ser Ser Trp Val Met

90

95

100

acc tgt gcc tac gcc ccg tcc ggg aac tac gtt gcc tgt gga ggc ttg	391
Thr Cys Ala Tyr Ala Pro Ser Gly Asn Tyr Val Ala Cys Gly Gly Leu	
105 110 115	
gat aac atc tgc tcc ata tac aac cta aag acc cga gag gga gat gtg	439
Asp Asn Ile Cys Ser Ile Tyr Asn Leu Lys Thr Arg Glu Gly Asp Val	
120 125 130	
cgg gtg agc cga gaa ttg gca gga cac acg ggc tac ttg tcc tgc tgc	487
Arg Val Ser Arg Glu Leu Ala Gly His Thr Gly Tyr Leu Ser Cys Cys	
135 140 145	
cga ttc tta gat gat gga caa atc att aca agt tcg gga gac acg act	535
Arg Phe Leu Asp Asp Gly Gln Ile Ile Thr Ser Ser Gly Asp Thr Thr	
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tgt gct ttg tgg gac att gag acc gga cag cag act acg acc ttc aca	583
Cys Ala Leu Trp Asp Ile Glu Thr Gly Gln Gln Thr Thr Thr Phe Thr	
170 175 180	
gga cac tcg ggt gac gtg atg agc ctc tca ctg agt cct gac ttg aag	631
Gly His Ser Gly Asp Val Met Ser Leu Ser Leu Ser Pro Asp Leu Lys	
185 190 195	
acg ttt gtg tct ggt gct tgt gat gca tcc tca aag ctg tgg gat atc	679
Thr Phe Val Ser Gly Ala Cys Asp Ala Ser Ser Lys Leu Trp Asp Ile	
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cga gat ggg atg tgt aga cag tct ttc acc gga cac atc tca gac atc	727
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<213> Mus musculus

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Ile Thr Ser Asn Met Asp Ser Val Gly Arg Ile Gln Met Arg Thr Arg
 35 40 45

Arg Thr Leu Arg Gly His Leu Ala Lys Ile Tyr Ala Met His Trp Gly
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Tyr Asp Ser Arg Leu Leu Val Ser Ala Ser Gln Asp Gly Lys Leu Ile
 65 70 75 80

Ile Trp Asp Ser Tyr Thr Thr Asn Lys Met His Ala Ile Pro Leu Arg
 85 90 95

Ser Ser Trp Val Met Thr Cys Ala Tyr Ala Pro Ser Gly Asn Tyr Val
 100 105 110

Ala Cys Gly Gly Leu Asp Asn Ile Cys Ser Ile Tyr Asn Leu Lys Thr

115

120

125

Arg Glu Gly Asp Val Arg Val Ser Arg Glu Leu Ala Gly His Thr Gly

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135

140

Tyr Leu Ser Cys Cys Arg Phe Leu Asp Asp Gly Gln Ile Ile Thr Ser

145

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155

160

Ser Gly Asp Thr Thr Cys Ala Leu Trp Asp Ile Glu Thr Gly Gln Gln

165

170

175

Thr Thr Thr Phe Thr Gly His Ser Gly Asp Val Met Ser Leu Ser Leu

180

185

190

Ser Pro Asp Leu Lys Thr Phe Val Ser Gly Ala Cys Asp Ala Ser Ser

195

200

205

Lys Leu Trp Asp Ile Arg Asp Gly Met Cys Arg Gln Ser Phe Thr Gly

210

215

220

His Ile Ser Asp Ile Asn Ala Val Ser Phe Phe Pro Ser Gly Tyr Ala

225

230

235

240

Phe Ala Thr Gly Ser Asp Asp Ala Thr Cys Arg Leu Phe Asp Leu Arg

245

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255

Ala Asp Gln Glu Leu Leu Leu Tyr Ser His Asp Asn Ile Ile Cys Gly
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Ile Thr Ser Val Ala Phe Ser Lys Ser Gly Arg Leu Leu Leu Ala Gly
275 280 285

Tyr Asp Asp Phe Asn Cys Ser Val Trp Asp Ala Leu Lys Gly Gly Arg
290 295 300

Ser Gly Val Leu Ala Gly His Asp Asn Arg Val Ser Cys Leu Gly Val
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Arg Ile Trp Asn
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Ser Asn Asn Ser Thr Thr Ser Ile Ser Gln Ala Arg Lys Ala Val Glu

10

15

20

cag ctg aag atg gaa gcc tgc atg gac agg gtg aag gtc tcc cag gct 150

Gln Leu Lys Met Glu Ala Cys Met Asp Arg Val Lys Val Ser Gln Ala

25

30

35

gcc tca gac ctc ctg gcc tac tgt gaa gcc cac gtg cgg gag gac ccc 198

Ala Ser Asp Leu Leu Ala Tyr Cys Glu Ala His Val Arg Glu Asp Pro

40

45

50

ctc atc atc cca gtg cct gcc tca gaa aac ccc ttc cgg gag aag aag 246

Leu Ile Ile Pro Val Pro Ala Ser Glu Asn Pro Phe Arg Glu Lys Lys

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60

65

ttc ttc tgc acc atc ctc taa cacccatggc gatgaagcgg gccctttcct 297

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75

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307

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<400> 44

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Lys Val Ser Gln Ala Ala Ser Asp Leu Leu Ala Tyr Cys Glu Ala His
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 Met Arg Pro Ser Gly Thr Ala Arg Thr Thr Leu Leu Val
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 Leu Leu Thr Ala Leu Cys Ala Ala Gly Gly Ala Leu Glu Glu Lys Lys
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 Val Cys Gln Gly Thr Ser Asn Arg Leu Thr Gln Leu Gly Thr Phe Glu
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 Asp His Phe Leu Ser Leu Gln Arg Met Tyr Asn Asn Cys Glu Val Val
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 Leu Gly Asn Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser
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 Phe Leu Lys Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu
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 aac acc gtg gag aga atc cct ttg gag aac ctg cag atc atc agg gga 578
 Asn Thr Val Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly
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 aat gct ctt tat gaa aac acc tat gcc tta gcc atc ctg tcc aac tat 626
 Asn Ala Leu Tyr Glu Asn Thr Tyr Ala Leu Ala Ile Leu Ser Asn Tyr
 110 115 120 125
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 Gly Thr Asn Arg Thr Gly Leu Arg Glu Leu Pro Met Arg Asn Leu Gln
 130 135 140
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Asn Met Asp Thr Ile Gln Trp Arg Asp Ile Val Gln Asn Val Phe Met	
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Ser Asn Met Ser Met Asp Leu Gln Ser His Pro Ser Ser Cys Pro Lys	
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Cys Asp Pro Ser Cys Pro Asn Gly Ser Cys Trp Gly Gly Gly Glu Glu	
190 195 200 205	
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Asn Cys Gln Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser His	
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cgc tgt cgt ggc agg tcc ccc agt gac tgc tgc cac aac caa tgt gct	962
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Ala Gly Cys Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Gln Lys	
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Phe Gln Asp Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu	
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Val Glu Glu Asp Gly Ile Arg Lys Cys Lys Lys Cys Asp Gly Pro Cys	
320 325 330	
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 Val Lys Glu Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Asp Asn
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 Ile Ile Ser Gly Asn Arg Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp
 465 470 475
 aaa aaa ctc ttc ggg aca ccc aat cag aaa acc aaa atc atg aac aac 1730
 Lys Lys Leu Phe Gly Thr Pro Asn Gln Lys Thr Lys Ile Met Asn Asn
 480 485 490
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 Arg Ala Glu Lys Asp Cys Lys Ala Val Asn His Val Cys Asn Pro Leu
 495 500 505
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tgc cag aat gtg agc aga ggc agg gag tgc gtg gag aaa tgc aac atc				1874
Cys Gln Asn Val Ser Arg Gly Arg Glu Cys Val Glu Lys Cys Asn Ile				
	530	535	540	
ctg gag ggg gaa cca agg gag ttt gtg gaa aat tct gaa tgc atc cag				1922
Leu Glu Gly Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile Gln				
	545	550	555	
tgc cat cca gaa tgt ctg ccc cag gcc atg aac atc acc tgt aca ggc				1970
Cys His Pro Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys Thr Gly				
	560	565	570	
agg gga cca gac aac tgc atc cag tgt gcc cac tac att gat ggc cca				2018
Arg Gly Pro Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly Pro				
	575	580	585	
cac tgt gtc aag acc tgc cca gct ggc atc atg gga gag aac aac act				2066
His Cys Val Lys Thr Cys Pro Ala Gly Ile Met Gly Glu Asn Asn Thr				
590	595	600	605	
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Leu Val Trp Lys Tyr Ala Asp Ala Asn Asn Val Cys His Leu Cys His				
	610	615	620	
gcc aac tgt acc tat gga tgt gct ggg cca ggt ctt caa gga tgt gaa				2162
Ala Asn Cys Thr Tyr Gly Cys Ala Gly Pro Gly Leu Gln Gly Cys Glu				
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Val Trp Pro Ser Gly Tyr Val Gln Trp Gln Trp Ile Leu Lys Thr Phe				
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Trp Ile				
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 65 70 75 80
 Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val
 85 90 95
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 Tyr Glu Asn Thr Tyr Ala Leu Ala Ile Leu Ser Asn Tyr Gly Thr Asn
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 Arg Thr Gly Leu Arg Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu
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 145 150 155 160
 Thr Ile Gln Trp Arg Asp Ile Val Gln Asn Val Phe Met Ser Asn Met
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 Ser Met Asp Leu Gln Ser His Pro Ser Ser Cys Pro Lys Cys Asp Pro
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Ser Cys Pro Asn Gly Ser Cys Trp Gly Gly Gly Glu Glu Asn Cys Gln
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 Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser His Arg Cys Arg
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 Gly Arg Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys
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 Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Gln Lys Phe Gln Asp
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 355 360 365
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